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ADDRESSES AND ORIGINAL ARTICLES

SURGERY OF THE COMMON BILE-DUCT *

BY SIR JAMES WALTON, K.C.V.O., M.S. Lond., F.R.C.S., F.A.C.S.
SURGEON TO THE LONDON HOSPITAL

THE biliary tract is subject to many anatomical variations, several of which are of great surgical importance. The cystic artery may lie below or in front of the cystic duct or curve in front of the hepatic duct and, if accidentally cut, cause severe hæmorrhage, in the controlling of which the common bile-duct or the hepatic duct may be tied (fig. 1a). The main hepatic artery or its right branch may loop up behind the gall-bladder (fig. 1b) and be divided in mistake for the cystic artery, causing necrosis of the liver. Very rarely the cystic duct is absent, the hepatic duct or ducts opening into one side of the gall-bladder and the common duct emerging on the other (fig. 1c). Much more commonly the cystic duct is unusually long and even opens into the ampulla (fig. 1d). If this is not recognised, stones in the common duct may easily be overlooked, and after cholecystectomy a portion of cystic duct may be left, which may dilate into a pouch, containing stones, almost as large as the original gall-bladder.

It is often in the seemingly easy case that danger arises, for a thin patient with a low, mobile and easily everted liver often has mobile ducts, so that traction applied to Hartmann's pouch draws out a loop of the common duct (fig. 1e), which is mistaken for the cystic duct and divided. This danger is greatly increased if the resection of the gall-bladder is begun at the fundus, when the traction is greater and the deep field obscured by blood. The cystic duct (fig. 1f) or a dilated Hartmann's pouch (fig. 1g) may be so adherent to the common duct that the latter may be mistaken for the cystic duct and divided. So common are these variations that it should be an invariable rule that no structure in this region should be divided until all three ducts and the cystic artery have been identified (fig. 3b).

Sometimes the duct has not been completely divided, but the injury has led to a stricture and incomplete obstruction. All such strictures of the common duct are not, however, due to injury at a previous operation. It is often stated that a stone which has long been impactedin the common duct, and which may occasionally perforate it, may cause ulceration which in its later healing may stenose and obstruct the duct. In my experience this has been very rare. In my own series there were 20 cases of division, 6 traumatic strictures and 5 inflammatory strictures.

* Bradshaw lecture for 1939 delivered before the Royal College of Surgeons on Dec. 14 (abridged).

REPAIR OF LESIONS

These lesions, if recognised at the time, can generally be rectified by immediate end-to-end suture; but if they are unrecognised one of two conditions will follow. If the upper end of the duct is open, the bile escapes and does not pass into the intestine. Such patients may remain in fair health for a considerable time, and an operation for repair will usually be performed before their condition has seriously deteriorated. If, on the other hand, the duct has been ligatured, the patient rapidly becomes profoundly jaundiced, with complete absence of bile in the stools. Her health rapidly deteriorates, owing to back pressure on the liver, and at times the secretion of bile pigment may cease entirely, so that the distended duct is filled with a fluid like thin mucus, the so-called white bile. Any operation on such a patient is a serious risk. The most hopeless examples are those in which the common duct has been divided below in mistake for the cystic duct, and, as the gall-bladder is drawn out by traction, the two hepatic ducts are again divided high up in the hilum of the liver, into which they retract, so that at the second operation no trace of the duct can be found.

When there is a fistula or obstruction, the lower end of the duct is, as a rule, indiscernible, and the upper end of the duct has to be united with the duodenum; for the gall-bladder has generally been removed, and a cholecystduodenostomy is therefore impossible. If the cut end of the duct can be easily approximated to the duodenum, Mayo's direct implantation often suffices; but it is difficult to make a valvular opening, and there is a risk of ascending infection. A fistulous tract may be carefully separated from the abdominal wall, and

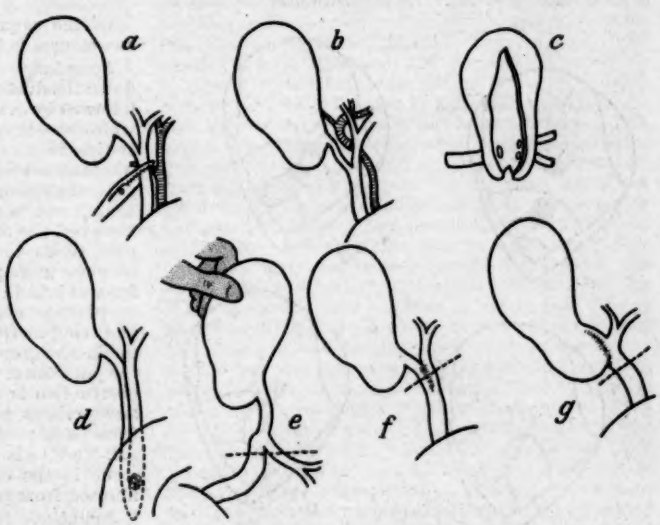

FIG. 1—Anomalies possibly leading to lesions of the bile-ducts: (*a*) cystic artery lying below cystic duct has been accidentally cut, and in controlling the hæmorrhage the common bile-duct is accidentally clamped; (*b*) loop of hepatic artery occupying normal position of cystic artery; (*c*) congenital absence of cystic duct; (*d*) long cystic duct opening into ampulla; (*e*) mobile loop of common duct drawn up by traction on gall-bladder; (*f*) cystic duct adherent to hepatic duct; (*g*) Hartmann's pouch adherent to common bile-duct.

its lower end may be implanted into the duodenum (Walters 1939), but this does not give a valvular opening, and the greater part of the new duct, not being lined by epithelium, is liable to cicatrise and stenose, leading to obstruction. When direct anastomosis is impossible, the Sullivan method of inserting a tube between the cut end of the duct and an opening in the duodenum and wrapping the tube in omentum can be used. Here again the internal fistula left between duct and duodenum is lined by omentum only and likely to stenose. To overcome these dangers of subsequent stenosis and ascending cholangitis in the absence of a valvular opening into the duodenum, I devised an operation (fig. 2) whereby a new duct was made from a flap of duodenal wall, which was sutured round the tube inserted by the Sullivan method (Walton 1915). This ensured an epithelial lining for at least three-quarters of the circumference of the duct and allowed a valvular opening. If the liver has suffered badly from back pressure, much improvement may follow a slow decompression (Ravdin and Frazier 1937). The duct is opened, a long tube inserted and fixed, the wound closed, and the liver slowly decompressed. At a second operation performed about two weeks later the tube is cut off about 3 in. below the duct, an opening and flap made in the anterior wall of the duodenum, and the new duct reconstructed in the usual way. In the almost hopeless cases in which no trace of the upper end of the duct can be found an incision may be made into the liver substance, and the resulting biliary fistula may be united to the duodenum.

CONGENITAL DIVERTICULUM

A congenital diverticulum of the common bile-duct consists of a very rare dilatation extending from the duodenum to the cystic duct or sometimes to the hepatic ducts (fig. 3a). Its contents may amount to several pints, suggesting an ovarian cyst or even a pregnancy. The most constant symptom is attacks of severe colicky pain, often associated with jaundice. The diverticulum has been known to rupture, the symptoms then resembling those of a perforated peptic ulcer. Not only is the condition often overlooked on clinical examination, but also it may be missed at operation. The reason is probably that the gall-bladder is generally not dilated, and the diverticulum may be covered by membranous sheets. It cannot be too strongly emphasised that, if a patient has symptoms suggesting gall-stones, the common duct must always be examined. If this rule is followed, the diverticulum cannot be overlooked. If left, the condition appears to be always progressive and ultimately fatal owing to back pressure on the liver. A choledochoduodenostomy should always be performed.

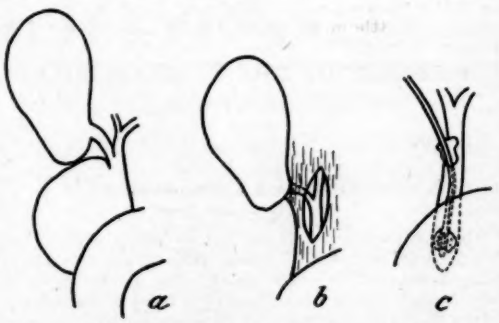

FIG. 3—(*a*) Congenital diverticulum of common bile-duct; (*b*) exposure of all three ducts; (*c*) removal of stone through stump of cystic duct.

IMPACTED GALL-STONE

Of the acquired lesions of the common duct the commonest is the impaction of a gall-stone (table I).

Symptoms.—As a general rule, when a stone passes down the duct it causes attacks of severe colic, shortly followed by evidence of interruption in the flow of bile: white stools, dark urine and jaundiced skin and conjunctivæ. The stone may then pass and the whole attack be over; but, even if the stone does not pass, the spasm of the duct may abate, the bile pass again, and a false sense of security arise. Soon, however, the attacks are repeated, and, although the pain tends to become steadily less, the jaundice becomes more persistent, although the characteristic form of jaundice in this type of obstruction is variable or perhaps even definitely intermittent. The skin and conjunctivæ tend to remain bright orange, unlike the grey-green appearance in the late stages of the jaundice of a complete obstruction. Although the obstruction is incomplete, the duct becomes dilated and perhaps infected, and the liver rapidly suffers from back pressure. Although the ducts dilate, the gall-bladder is rarely distended from impaction of a stone in the common duct, probably because it is fibrosed from previous attacks of cholecystitis.

Jaundice.—It is usually taught that an operation in the presence of jaundice is a serious proceeding, and that it is better to wait until the jaundice has disappeared. This is entirely contrary to my experience. The risk in my cases has always been due to the back pressure on the liver, and, although the jaundice may vary, the damage from the back pressure steadily progresses as long as the obstruction remains. The danger of hæmorrhage in the presence of jaundice

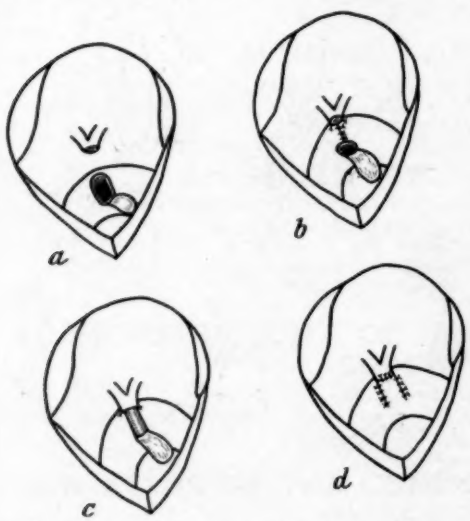

FIG. 2—Reconstruction of common bile-duct: (*a*) opening made in duodenum and flap turned back; (*b*) suture of stump of common bile-duct to duodenum and closure of upper part of opening in duodenum with sutures; (*c*) insertion of tube to connect stump of common bile-duct with opening in duodenum; (*d*) suture of duodenal flap round tube.

has always seemed to me an academic myth, and I have found little or no value in preliminary calcium therapy. The patient may be watched for a few days to see if the stone will pass, but, generally speaking, the presence of jaundice is an urgent indication for operation. For this reason the diagnosis of obstructive jaundice from that due to a toxic or infective hepatitis is extremely important.

The differential diagnosis is best made from the clinical history and by physical examination. In my cases the van den Berg test has been of very little help. Jaundice due to hepatitis usually has an insidious onset with no pain. There is often a slight pyrexia during the first few days, or, if the jaundice is of toxic origin, there is evidence of gastro-intestinal disturbance preceding the jaundice. In the infective cases several persons living in the same house may have been affected, and there is no past history. The jaundice may be complete or incomplete, and in the early stages the liver is usually enlarged and often tender. In some cases of gall-stone obstruction, however, colic is absent; but there is usually a past history of flatulent dyspepsia or of attacks suggesting cholecystitis, and there is often a tenderness over the gall-bladder. If the differential diagnosis cannot be made, an operation should be undertaken if the jaundice has not abated in six weeks. So long a wait may risk damage to the liver, but this risk may be less than that of performing a useless operation on a patient dangerously ill with hepatitis. With such a wait an organic obstruction is usually found at operation.

A stone may be impacted in the common duct without causing jaundice; therefore absence of jaundice must never be regarded as evidence that the duct is clear. If a stone is impacted, the duct above usually shows some dilatation and the cystic duct a relatively large lumen owing to the passage of a stone down it; but these changes may be relatively so slight that they are often overlooked. If there is any doubt, the duct should always be palpated from without. It has been said that even very small stones can be felt in this way by the trained finger; but often I have removed from the common duct stones which I had failed to palpate from without. Therefore no operation on the gall-bladder can be considered complete unless the common duct has been explored and the patency of its lumen made evident. Such an exploration, however, may increase the danger of the operation. If in such a case there has never been any jaundice, the cystic duct is small, the common duct is not dilated, and nothing can be felt from without, it may be considered that the risk of overlooking a stone in the duct is less than the risk to the patient of exploring it; and a simple cholecystectomy may be performed, but a note should then always be made that the duct was not explored, and the patient should be carefully watched after the operation.

Recurrent stones.—Some of the recurrent stones found in the common duct may have been formed therein after the first operation. This possibility considerably affects the prognosis. If there is a cholangitis and a stone is removed, another may form later, but if it is an overlooked stone, it is improbable that a second will escape notice. A stone formed in the common duct in cholangitis consists of relatively soft pigment calcium and contains no cholesterin, whereas a stone formed in the gall-bladder is laminated. Of the 65 cases of recurrent calculi in my series only 9 of those in the common duct were pure pigment, the remainder being laminated stones. Hence I believe that most of the recurrent stones in the common duct have been overlooked at the first operation, and that true recurrences are rare. For this reason I have very little faith in the suggestion that the common duct should be washed out with ether. Ether dissolves pure pigment calculi but has no effect on laminated calculi. It is therefore better always to explore the duct and to dilate the ampulla to allow small fragments to pass.

Operation.—A free exposure must always be made. I prefer the right paramedian incision. If the back is

TABLE I—STONES IN COMMON BILE-DUCT

Lesions of biliary tract	1192	Recurrent stones	65
Gall-stones (all cases)	933	Gall-bladder only	19
Stones in common duct:		Gall-bladder and duct 15	46
Primary, 151	197	Common duct only, 31	
Recurrent, 46		Laminated stones in common duct, 37	46
With colic	173	Pigment stones in common duct, 9	
With jaundice	158		
With white bile	6		

slightly arched on the gall-bladder rest, and the foot of the table slightly tilted downwards, good access, especially to the ducts, can always be obtained. Occasionally a transverse incision of the whole thickness of the abdominal wall or of the posterior sheath only may be useful. The Kocher incision I never employ. I am aware that several very experienced and skilled surgeons advocate its use, but I have seen several large ventral herniæ after its use by other surgeons, and in other cases of recurrent calculi where this incision had been previously employed I have found the upper segment of the rectus atrophic, owing to division of its nerve supply.

The intestines below having been packed off and the gall-bladder drawn upwards and outwards, the peritoneum of the edge of the gastrohepatic omentum is divided, and the ducts are carefully dissected. Usually the three ducts—cystic, common hepatic and common bile—are easily identified; no structure whatever must be divided until all three have been identified. The cystic duct is now divided and clamped; the cystic artery, identified and distinguished from a loop of the right hepatic artery, ligatured and divided. The clamp is slipped from the lower end of the cystic duct, a dissector inserted down it and the duct slit up. It is the usual custom to close the cystic duct and to explore the common duct through a separate incision. As a rule the slitting up of the cystic duct is preferable. Only one opening is made in the duct, and, when it is sutured, no stump can be left to form a new pouch like a gall-bladder—a complication which I have seen in 3 cases. The only condition in which a separate opening is necessary in the common duct is when the cystic duct is very long and opens into the ampulla. When the cystic duct has been slit up, a pair of very fine forceps is passed downwards, any stone removed (fig. 3c), and the forceps then passed through the papilla and opened as widely as possible, so as to dilate fully the opening of the duct. This I regard as the complete operation which is desirable in every case and only to be shortened in those patients who are bad operative risks. Since the routine use of this procedure I have not met with any symptoms due to spasm of the sphincter of Oddi. In a few cases a stone may be so firmly impacted in the ampulla that it cannot be displaced upwards and withdrawn by forceps. A transduodenal approach with incision of the papilla may then be necessary.

The next question is that of drainage of the common duct. The usual indications for this procedure are: (1) great dilatation of the common duct; (2) recurrent calculi; (3) soft pigment calculi; and (4) pus in the ducts. If the forceps can be passed freely into the

duodenum and dilated, many of these cases may be left without drainage. In other words, internal is substituted for external drainage, and I generally only drain externally a duct which contains purulent bile. For drainage I never use a T-tube; its withdrawal is likely to injure the duct, and its use is never necessary. If the bile is very infected, a smooth rubber tube should be inserted up towards the hilum of the liver. If the infection is less, the tube may be passed downwards towards the duodenum, in which case some bile may pass downwards alongside it. The tube should always be fixed in position with a fine intestinal catgut suture and the duct closed round it. It should not be withdrawn until the tenth day. The gall-bladder is now removed, the cut edges of the peritoneum of the gastrohepatic omentum sutured over the stump of the sutured cystic duct or round the tube, and the suturing continued upwards to unite the edges of the gall-bladder bed. Whether the common duct is drained or not, a tube should always be inserted down to Morison's pouch, for in some cases small accessory ducts open directly into the gall-bladder and may discharge a small quantity of bile. This tube can usually be removed in twenty-four to forty-eight hours.

The results of operation (table II) show that the impaction of a stone within the common duct must always be regarded as a serious complication. Most of my fatal cases have had symptoms suggestive of liver failure, and it is for this reason that I advocate early operation before the hepatic damage has advanced to a severe degree.

TABLE II—RESULTS OF OPERATIONS ON GALL-STONES

Site	Cases	Deaths	Percentage
Gall-bladder ..	417	5	1·2
Common duct :—			
Primary	151	20	13·2
Recurrent ..	46	7	15·2

CARCINOMA

Carcinoma of the common bile-duct may arise in any portion of the ducts, but is very rare in the cystic duct. The symptoms and methods of treatment vary with its position.

Sites and symptoms.—In the ampulla carcinoma may obstruct both the common bile-duct and the pancreatic duct (fig. 4a), so that absence of the external pancreatic secretion may cause recognisable changes in the stools; and the back pressure may cause so much injury to the gland that its internal secretions are also diminished. If the carcinoma is in the common duct below the entrance of the cystic duct (fig. 4b), the pancreas escapes, but in both situations the tumour simulates a neoplasm of the head of the pancreas. The gall-bladder and the ducts above the growth are considerably dilated, and the gall-bladder is filled with a thick concentrated bile, which has a tar-like consistency and may be so concentrated that on radiography it gives a direct shadow similar to that seen after administration of dye. If, however, there has been a previous cholecystitis with stones, this concentration does not take place. When the growth is at the junction of all three ducts (fig. 4c), there is the same clinical picture, with a dilated gall-bladder; but no bile can enter the gall-bladder, and the distension is due to the mucoid secretions of the walls of the gall-bladder. If the growth is above the cystic duct (fig. 4d), the gall-bladder is not distended, and generally in these cases

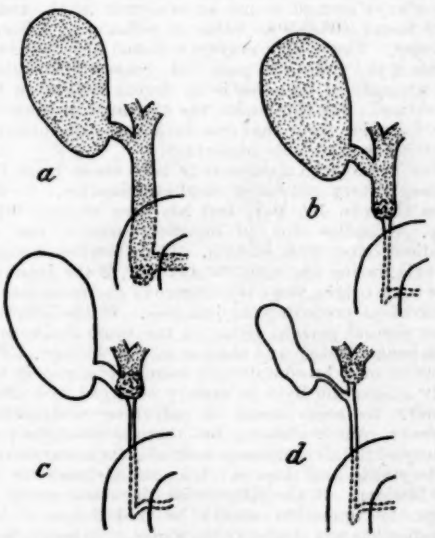

FIG. 4—Carcinoma of common bile-duct: (*a*) at the ampulla; (*b*) below the cystic duct; (*c*) at the junction of all three ducts; (*d*) above the cystic duct.

the growth extends up to the hilum of the liver, so that no portion of the dilated hepatic ducts may be visible above the obstruction.

In many cases gall-stones are present (table III). In this event there may be a past history of the stones, but usually the onset of the disease is shown by jaundice, which is constant and progressive from the beginning with little or no pain. The urine is dark and heavily laden with bile, and the stools are completely free from bile. It is characteristic of a persistent jaundice of this type that after a time the bright orange and red of the jaundice are lost and replaced by a green or colour which becomes greyish; so that the jaundice may not only be thought to be diminishing but also overlooked, for the patient comes to have more the appearance of a half-caste than of a jaundiced person. This may be due to an alteration of the pigment in the tissues or to complete failure of the bile-forming function of the liver, the ducts and gall-bladder being found at operation to contain colourless and watery white bile.

Except when the growth is in the hepatic duct, the gall-bladder is distended and may be easily palpable, but although distended it may be placed so deeply beneath the liver that it cannot be felt, and in making a diagnosis greater reliance must be placed on the character of the jaundice than on the presence of a palpable gall-bladder. The liver is usually evenly and firmly enlarged, but is painless. The jaundice is generally apyrexial, but occasionally there is cholangitis, with rigors and a tender liver. The course of the disease is rapid, and the patient soon becomes emaciated, the appetite disappears, and later he may become comatose from failure of liver function. In the later stages life may be made miserable by intolerable itching.

Surgical treatment.—The common bile-duct is so closely related to other important structures, which early become involved in the growth, that a radical removal is seldom possible. Occasionally a papilloma-like growth in the ampulla may cause intermittent or complete obstruction before it has

spread into the substance of the head of the pancreas, in which event it may be excised by a transduodenal resection, the dilated pancreatic duct and bile-duct being cut across and then united together and to the divided posterior duodenal walls. Sometimes a scirrhous growth in the common duct may be so localised that a resection followed by an end-to-end suture is possible.

In the remaining cases considerable relief may be gained by the performance of a short circuit. This should be carried out wherever possible, for thereby the great distress caused by the irritation of the skin may be overcome. If the bladder is distended it may be anastomosed to the stomach or the duodenum. If it contains thick bile, this is the procedure of choice; difficulty may, however, arise if its contents are only mucoid. This may be due to failure of the liver function and to the presence of so-called white bile or more commonly to obstruction of the cystic duct by a growth at the junction of all three ducts; in which event the only hope of relief lies in an anastomosis, usually a lateral reconstruction, between the dilated hepatic ducts and the duodenum. The most disappointing cases are those in which the growth is in the hepatic ducts and extends so far up into the hilum of the liver that no dilated duct can be discovered above it. Theoretically it might here be possible to establish a hepatic fistula, which could later be united to the intestine, but this procedure would occupy so much time that I have never considered it justifiable.

TABLE III—CARCINOMA OF GALL-BLADDER AND DUCTS

Site	Cases	Males	Females
Gall-bladder alone ..	21	5	16
Gall-bladder and ducts ..	12	3	9
Ducts alone	33	11	22
Gall-bladder	21	11 (With stones)	— (With white bile)
Ampulla	15	4 (With stones)	3 (With white bile)
Common duct	12	5 (With stones)	2 (With white bile)
Junction of ducts ..	12	2 (With stones)	1 (With white bile)
Hepatic ducts	6	1 (With stones)	— (With white bile)

Operation	Cases	Deaths
Laparotomy	20	10
Anastomosis with gall-bladder ..	14	4
,, ,, common duct ..	7	3
Resection	4	1

Operation may be necessary in carcinoma of the head of the pancreas or in chronic pancreatitis, either of which may obstruct the common duct. The diagnosis of these two conditions from one another is seldom certain at the time of operation. The established symptoms may be identical; the appearances at operation are, in the absence of secondary deposits, very similar; and, even if a piece of the pancreas is removed for section, a step which I do not consider justifiable, the growth may be missed. A careful investigation of the past history, together with the surgical findings, will, however, nearly always allow of a correct diagnosis.

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A CASE OF PARAPLEGIC BERIBERI

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ROUTINE case-taking should always include an inquiry into the patient's diet, and the physician should never be satisfied with the patient's assurance that he takes "ordinary food" or just "whatever is going." In many such cases cross-examination reveals that the diets are unsatisfactory, sometimes to a considerable degree. Diets deficient in vitamin are particularly common in the following groups of people:—

(1) The poor of industrial populations.
(2) Those taking "special diets" for dyspepsia.
(3) Lonely people—often elderly, sometimes poor, sometimes not, but always more or less friendless—who have no interest in what they eat or in whether they eat at all. Some in this group fall into the next category.
(4) Psychoneurotic and mildly psychotic subjects. Patients in this group may choose extremely faulty diets with serious consequences to health, as in a case reported by me (Young 1938).

A further example of a strange diet and its effects seems to be of sufficient clinical interest to justify recording.

CASE-RECORD

A married woman, aged 48, living near London, was referred to me on Oct. 28, 1937, because of difficulty in using her hands, sensory disturbances in all the limbs, and unsteadiness of gait.

Previous history.—She was a 4-para. First child stillborn. Three other children healthy. Always an active woman. No illnesses other than infrequent attacks of bronchial asthma. Menstrual periods stopped three years ago, menopausal symptoms being inconspicuous.

Patient was always a small eater, but took an ordinary mixed diet up to 1922. She then developed a distaste for animal food and from this point stopped eating one thing after another, until by 1928 she was taking no bread, butter, meat, poultry, eggs, fish, cream or milk—except in tea. At that time the diet consisted of biscuits, cheese, fruit of every kind in large quantities; uncooked vegetables, especially watercress and lettuce, chopped mint and vinegar; tea (the sole beverage taken) and chocolate, of which she ate large quantities.

As the years passed, her appetite diminished further, and for five years before her illness she had been taking only one meal a day, composed of various fruits, uncooked vegetables, chocolate, and tea. Still further reductions were made in the diet, and for a year before her illness the only food eaten was ½ lb. of milk-chocolate and 1 lb. of grapes, this strange meal being consumed last thing at night. By day nothing was taken except a few cups of tea (with a little milk) in the morning and afternoon. In addition she permitted herself "one or two tomatoes about once or twice a week," and an egg beaten up in milk, taken when she had a headache, about once a month.

Meanwhile the patient led an energetic life, doing all her own housework and cooking the food for her husband and family, who ate normal meals. Apart from her interest in household duties, she was very keen on motoring, drove about a thousand miles a month, and cleaned the car every day.

These activities, involving the expenditure of a considerable amount of energy, were unattended by undue fatigue, and she remained perfectly well until the end of June, 1937, when she had four teeth extracted, one being very difficult and involving two attempts at removal. The operation tried her greatly; she came home feeling exhausted and suffering from headache and malaise.

These symptoms did not pass off, and within a few days more striking symptoms were added. The hands, especially the right, became weak, and fine movements, such as doing up buttons or lifting small objects, became difficult or impossible. Sensory and vascular disturbances in the hands were troublesome, particularly a "bruised feeling in the thumbs." The fingers would go dead white at times, this change being unaccompanied by any feeling of cold.

Although the affection of the hands was so severe, no symptoms were experienced in the legs at this time, and the lower extremities were not affected till three weeks after the onset of symptoms in the hands. Then, a "stiff feeling in the thighs," weakness of the limbs, and unsteadiness on walking became associated with numbness and tingling, coldness of the feet, and swelling of the ankles. Soon, walking without support became impossible.

At this point—i.e., about a month after the first onset of symptoms—a remarkable and spontaneous change took place in the patient's appetite. She developed a craving for foods which she had not eaten for fifteen years, and she suddenly reverted to ordinary meals. There was a special desire for fish and butter, large quantities of the latter being eaten with hot scones; also eggs, green vegetables, and a good deal of milk. Bread was taken but stopped soon afterwards, for "it seemed to cause indigestion"; the hot scones and butter were continued, and the indigestion subsided!

Improvement took place as soon as the diet was increased; malaise, which had been much in evidence, now diminished, and twitching of limb muscles, previously severe, subsided.

When I saw the patient she had been taking the new diet for about two months, improving steadily in general condition and putting on weight. There were no symptoms other than headache, malaise, and those referable to the limbs. Constipation was present, but this was habitual. No dyspnœa was experienced at any time.

Condition on examination.—A small thin woman, with an anxious expression. Gait very unsteady. Weight 6 st. 9 lb. Skin dry; complexion sallow; dark rings under eyes; no other pigmented areas. Conjunctival mucosæ well coloured. Upper teeth extracted; lower teeth good; gums healthy. Tongue, throat, and buccal mucosa normal. Lungs healthy. Heart: apex-beat impalpable; rate 90; rhythm regular; sounds of good quality; no bruits. Blood-pressure 140/90. Abdominal examination negative.

Extremities: a firm œdema, pitting with difficulty, involved the dorsa of feet and ankles and extended symmetrically upwards over the tibiæ to midway between ankle and knee. The skin about the ankles was discoloured with a dusky erythema, and in this region a few dilated vessels, apparently in the deep layers of the skin, could be seen. There were no hæmorrhages. Bilateral foot-drop was present, with loss of sensation to pinprick and cotton-wool extending from toes to half way up the tibiæ. The right ankle-jerk was absent, the left very sluggish. Both knee-jerks were brisk. Gentle compression of the calf muscles was painful.

In the upper extremities all the tendon-reflexes were exaggerated. The hands showed considerable atrophy of the thenar eminences and "guttering" in the interosseous spaces. Sensory impairment extended from finger-tips to half way up the arms. No fibrillary twitching was seen in any of the limbs.

The abdominal reflexes were present, and the plantar responses flexor. Examination of cranial nerves was negative. There had been no sphincter disturbances.

The patient was admitted to the Insull wing, National Temperance Hospital, the following day. That night she had an attack of bronchial asthma, and the next morning a blood-count showed:—

Red cells	5,110,000	Polymorphs	75%
White cells	7100	Lymphocytes	14·5%
Hæmoglobin	100%	Monocytes	2·5%
		*Eosinophils	7·5%
		Basophils	0·5%

* The eosinophilia was ascribed to the asthmatic attack.

During a stay of three weeks her temperature was always subnormal and the urine free from albumin, sugar, and deposit. The respiration-rate averaged 20, the pulse-rate ranging between 80 and 96. Her weight increased by ¼ lb. weekly for two weeks but in the third week dropped 2¼ lb., a fall attributed to "fretting" to go home.

In hospital the patient ate a full mixed diet and had no gastro-intestinal disturbance other than constipation. She took on a more healthy appearance and said she felt better every day. Symptoms were confined to the limbs, the chief complaints being of subjective sensory disturbances, such as "tight strings drawing the calf muscles" and "a feeling of numbness in the thumbs."

Clinical examination of the heart revealed no abnormality other than tachycardia (80–96). The blood-pressure varied between 110–120/80.

In bed the œdema diminished. After eight days it had disappeared from the front of the legs but not from the feet, which remained appreciably swollen on discharge. As noted above, the œdema was firm, pitting on pressure less readily than ordinary œdema of the feet associated with cardiac or renal failure.

After a few days in hospital the dilated vessels about the ankles were no longer in evidence and did not reappear, but other vascular phenomena were seen in the legs. At times the skin was of normal colour, but at other times, and more often, there was a dusky erythema localised to the ankles. Another symmetrical change of strictly local distribution was a sequel to the œdema over the tibiæ. When this œdema had subsided, the overlying skin appeared as a highly polished strip, ivory white, standing out in contrast to the surrounding skin, an effect which lasted about two days. On one occasion a bright red erythema affected both legs from knee to ankle for several hours. In the upper limbs and elsewhere in the body there were no signs of any circulatory disturbances.

Psychologically the patient seemed of fair intelligence but was abnormally shy and diffident. Throughout her married life she had never entertained nor gone out socially. As mentioned above, she worked very hard and was evidently obsessed with ideas of cleanliness and hygiene. Her husband said that she was a splendid car driver, her courage in this respect being in contrast to her fear of social contacts. She was inclined to occasional moods of depression and could be jealous, exacting, and headstrong, but was very devoted to her home life. It was an ordeal for her to be away from it, and her greatest wish was to be well enough to leave hospital. Her shyness was probably increased by self-reproach that her illness was the outcome of her eccentric tastes in food, and it was difficult to engage her in conversation. However, she professed to be unable to explain why she had cut down her food in the first instance, and the reason for her frugal dieting remained a problem in the realm of the psycho-analyst.

On discharge from hospital the general condition was much better, and the paræsthesiæ in the limbs had improved considerably. There were then signs of commencing restoration of motor function. Progress continued at home, and a month later the ataxia had practically passed off.

Subsequent progress.—When seen again four months after leaving hospital the patient walked well, in spite of weak dorsiflexion at the ankles, particularly the right, where the tendon-reflex remained absent. Elsewhere in the body all the tendon-reflexes were exaggerated. The hand grip was stronger, wasting of the interosseous muscles was less, and in all the limbs subjective and objective sensory disturbances were slight. She was less shy and was reported to be more cheerful and less "difficult" than for years past. The weight had increased by 14 lb. She had resumed her former activities in the home and was driving the car. There was no effort dyspnœa whatsoever, but towards evening the ankles became slightly swollen. Examination of the heart disclosed no abnormality, the rate was 80 and the blood-pressure 120/72.

A year later she reported again, at my request.

Shortly after the previous visit the ankles had ceased to swell. On examination the right ankle-jerk was still absent, this foot was cold by comparison with the left, and the skin round the right ankle showed evidence of circulatory stasis. No other physical signs were present, but the patient, although professing to be very well, did not look fit. There had been recent loss in weight, and inquiry disclosed that her former eccentricities in diet were reasserting themselves. She was now eating a light breakfast, after which she fasted till 7 P.M., when another light meal was taken. About midnight there was another repast of fruit and chocolate. It was an unsatisfactory diet. Obviously the patient should have been under continuous medical supervision, but since leaving hospital she had refused to see her doctor.

DETAILS OF THE FORMER DIET

The daily menu had consisted of ½ lb. of milk chocolate, 1 lb. of grapes, and traces of milk (in tea). Occasional additions were a few tomatoes in the course of a week, and once a month an egg beaten up in milk. The composition of the chocolate, a well-known brand, was:—

Protein	8·0 per cent.	Phosphorus (P_2O_5)	0·58 per cent.
Fat	35·0 „ „	Calcium (as CaO)	0·36 „ „
Carbohydrates	53·0 „ „	Iron	8·5 per million
Mineral salts	2·0 „ „		

Energy value per lb.: 2615 calories.

The vitamin content of the chocolate was said to be:

Vitamin A	170 international units per oz.
Vitamin B	14 „ „ „ „
Vitamin C	Present
Vitamin D	17·8 „ „ „ „

Grapes are composed of:—

Water	77·4 per cent.	Carbohydrates	19·2 per cent.
Protein	1·3 „ „	Ash	0·5 „ „
Fat	1·6 „ „		

Energy value per lb.: 435 calories.

Grapes contain vitamin A, but their content of vitamin C is negligible. Vitamin B appears to be absent or present only in traces. Tomatoes are good sources of vitamins A, B_1, and C. Although consumed only in small quantities, their protective influence in this diet would be of great value.

DIAGNOSIS

Neither alcohol nor drugs had been taken, and the patient's condition of multiple neuritis could be ascribed only to her diet. This had the essentials of a beriberi-producing diet (composition chiefly carbohydrate; vitamins very deficient, particularly vitamin B_1) and had been taken over a protracted period. The association of such a diet with the clinical picture—multiple neuritis, combined with a firm œdema at the ankles and over the anterior aspects of the legs—suggests that the patient was suffering from the "dry" or paraplegic type of beriberi.

Given a beriberi-producing diet, onset of the disease is generally determined by hard muscular work or other circumstances that increase the metabolism, for this in turn demands additional supplies of vitamin B_1. In my patient the onset was clearly related to the extraction of teeth. She was extraordinarily apprehensive, and during the period covering the extractions there was great emotional disturbance, No doubt this was associated with hyperthyroidism and increased metabolism. Thereafter symptoms of beriberi developed rapidly.

COMMENTS

The neuritis of beriberi is described as affecting first the legs, the arms being spared or only affected later. My patient was an exception to this rule, her arms being affected for three weeks before the lower limbs became involved. This unusual sequence could be ascribed to the unusual character of the patient's activities. She went out every day, but not walking—always driving a car; the arms were used a great deal, not only for housework but also for the heavy work of cleaning the car. Indeed the legs, by comparison with the arms, were subjected to relatively little muscular strain. When, however, the legs became affected, the right foot suffered most, a result no doubt of the greater use made of this foot in driving a car.

There were no cardiac symptoms and no clinical evidence of the "beriberi heart." The patient's tachycardia was regarded as symptomatic of her emotional instability, and the slight swelling of the ankles towards evening during the stage of recovery was no more than that often seen in convalescence after any debilitating illness. Keefer (1930) has pointed out that the beriberi heart is seen in victims of the disease with little or no involvement of the nervous system. He considers that the inaction enforced on patients suffering from "dry" beriberi protects the heart from sharing in the morbid process.

The œdema of the legs conformed in type and distribution to that described as characterising beriberi. Trophic disturbance of the skin over the tibiæ and circulatory stasis about the ankles were also noted; such effects are seen in many cases of peripheral neuritis and perhaps may be common in beriberi, but I have seen no reference to them in authoritative textbooks. The deep dilated vessels about the ankles and the transient erythema of the legs suggest a link with "famine œdema," a disease regarded by some authorities as a special variety of beriberi and by others as a distinct but allied condition.

In her liking for chocolate the patient had a bond in common with another case of beriberi described by Palmer (1939).

Although she had not eaten ordinary food for years, my patient's appetite was suddenly and spontaneously restored as soon as the disease affected her legs. There was then a particular urge to eat butter. This instinctive craving for fat is of interest in view of the opinion of Mellanby, quoted by McAlpine (1937), that in man the neuritic symptoms of beriberi result from a deficiency of vitamin A, whereas a deficiency of vitamin B_1 is responsible for central nervous manifestations, such as prostration. Mellanby believes that cure of the polyneuritis is brought about by substances rich in vitamin A.

TREATMENT

Before coming under my care the patient had been eating good meals for two months and had been improving. In hospital she was given a diet containing fresh eggs, butter, milk, green vegetables, fruit, wholemeal bread, fish and meat. Additional vitamin B was given as Bemax 1 oz. and Marmite 1 drachm daily. Halibut-liver oil was also given in doses of 5 drops thrice daily.

At night splints were applied to the feet to counteract the foot-drop, but by day the patient was encouraged to move the limbs gently. Progress was very satisfactory.

SUMMARY

A case is described of a middle-aged eccentric woman who existed for months on a regimen of milk-chocolate and grapes. On this frugal diet, augmented occasionally by tomatoes and an egg beaten up in milk, good health was for long maintained, and the patient led a very active life. Ultimately symptoms of paraplegic beriberi supervened, the disease manifesting itself first in the upper extremities. There was no evidence at any time of involvement of the heart.

Soon after the onset of the disease there was a spontaneous restoration of appetite for ordinary foods. Treatment did not include the oral or parenteral exhibition of vitamin-B_1 concentrates, but progress was satisfactory.

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PREVENTION OF FOOT DEFORMITIES IN CHILDREN*

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IN the fœtus at an early stage and in the newborn child the longitudinal and transverse arches of the foot are well formed, but the bones are only partly ossified. In a child aged 2 years the scaphoid and inner and middle cuneiform bones are still unossified—ossification does not begin in these bones until the third year for the middle cuneiform and the fourth year for the scaphoid and inner cuneiform (fig. 1). The keystone of the inner longitudinal arch is the inferior calcaneonavicular ligament, on which impinges the under surface of the talus, conveying weight from the tibia to the inner section of the foot. The entire inner mediotarsal section of the foot is therefore in young children composed of soft or at least pliable structures and, relatively to the outer section, ill adapted to bear strains. Morton (1935) has shown, on the other hand, that in standing the weight is equally distributed between the heel and the fore part of the foot, and that of the weight distributed to the fore part of the foot the great-toe section receives a third and the other toes two-thirds. In walking more weight is conveyed towards the inner section of the foot, and in running the first-toe section, being the last to leave the ground, receives the full brunt of the weight at one moment in the stride.

Integrity of the inner section of the foot is therefore essential to simple standing and walking without strain. If the big toe is diverted from the correct position, it is unfavourably disposed for the reception of weight, and the head of the first metatarsal and the ligaments binding the metatarsophalangeal joint will have to bear a correspondingly greater strain. Weight proceeding from above, added to compression of the hallux by the side of the shoe, will tend to induce separation of the first and second metatarsal heads.

In taking an imprint of a child's foot it will be noted that in most cases the middle line of the foot drawn from heel to toes forms a curve. Very often this is accentuated by, though not dependent on, the fact that in the young child the great toe may appear well separated from the rest, as if to take an inward curve of its own. (This must not be confused with a varus deformity of the whole anterior foot.) In such a foot not only will the anatomical axis of the foot curve slightly inwards, but also the functional weight-bearing axes of the foot will show an even greater tendency to curve inwards owing to the importance of the great toe in leverage movements in walking. The leverage axis of the foot runs forwards to a point between the first and second toes (fig. 2). Ellis (1889) showed a typical adult imprint of barefoot Scottish people (fig. 3): in this the inward swing of the fore part of the foot is well marked.

* Based on a paper read to the maternity and child welfare section of the Society of Medical Officers of Health on June 25.

FOOT DEFORMITIES IN CHILDREN

Deformities of the feet, except certain congenital abnormalities, are not manifest in infants under a year old. Examination of 281 toddlers (aged 2–4 years) inspected as a routine at the Woolwich Toddlers' Clinic between March and June, 1939, gave the following figures:—

	Per cent.
Deflection of the terminal phalanx of the great toe	80
Incipient valgus at the first metatarsophalangeal joint	11
Flexion of the interphalangeal joint of the great toe	10
Rotation of the hallux	2·4
Incipient hammer toe	13
Distortion of the middle toes	22
Ditto (with overlapping)	4·6
Incurved or incurled fourth and fifth toes	30
Flattened longitudinal arch	10
Flattened metatarsal arch	7
Ingrowing toe-nail	12
Other soft-tissue lesions	9

Few of the disabilities of the adult mentioned in Creer's (1938) analysis of 1000 cases referred from foot-clinics lack representation in this list, and the minor deformities of the outer digits, which Creer noted as concomitants of the major complexes, are already present in great variety. Apart from soft-tissue lesions, which become multiplied through wear and tear, the young child just walking appears to suffer substantially the same type of deformity as the adult (though not with pain).

Sex-incidence.—At the age at which these examinations were made there was no sex differentiation in the incidence of deformities. Lake (1935) suggested that there is already a sex differentiation in school-children, but I have not observed this in the earlier school years, when boys and girls still wear similar types of shoes. But within the school-age period a much more highly developed type of deformity than has been described in the toddling child is already evident (fig. 4), though usually not characterised by pain. That adolescent girls begin to suffer much more than boys of the same age from some of the secondary lesions of hallux valgus is beyond dispute. Already at this age (apart from any question of heels) women's shoes retrogress in design. But those who blame the adult woman's shoe of today for the greater part of foot lesions would do well to examine how many males reach adolescence with wholly worthy feet, either from the point of view of æsthetics or of function.

Deflection of the terminal phalanx of the hallux, the most prevalent deformity (80 per cent.) discoverable in childhood, is typical of the developed hallux valgus. Examination of the true valgus from base to tip shows not only a deflection outwards of the axis of the hallux from that of the metatarsal but also a break in the axis of the hallux at the interphalangeal joint, with a further deflection outwards of the terminal phalanx (fig. 4). This is not to be confused with

FIG. 1—The last bones of the foot to ossify: ossification begins (1) in first year; (3) in third year; (4) during fourth year. A, leverage axis of foot; B, direction of progress. The gap (shaded) is bridged by the calcaneonavicular ligament.

FIG. 2—Footprint of child aged 10 months, showing separation of great toe and positions of anatomical and leverage axes.

FIG. 3—Adult footprint (after Ellis).

deformities of rotation and flexion also present in the established valgus and discovered also in some young children. It is a true break in the longitudinal axis of the hallux, is slight compared with the deviation noticeable at the metatarsophalangeal joint in patients coming for treatment, and therefore often escapes notice although present.

This deformity is not found in young children who have not worn shoes and walked. It is never a deviation inwards—i.e., an exaggeration of the natural trend of the toe in some young infants—but is always a deflection outwards of the terminal part of the toe noticeable along its inner border. It is often accompanied by ingrowing of the great toe-nail along its medial edge and by bruising or blistering of the soft tissues of the toe at the medial side of the tip. No comparable deformity is found in the hand, though the pull of tendons on the end of the fingers roughly corresponds. Nor could outward deviation of this phalanx only be produced by the body-weight, since this impinges on the toe along the metatarsal shaft in an inward, forward, and downward direction.

The tendons attached to the terminal phalanx of the hallux are those of the extensor longus hallucis and flexor longus hallucis muscles on the dorsal and plantar surfaces respectively. These pull in either case from a point situated external to the line of the first metatarsal shaft, the extensor tendon having an association on the dorsum of the foot with the extensor longus digitorum through the extensor brevis, and the flexor hallucis tendon passing diagonally outwards beneath the sustentaculum tali (where it crosses the flexor longus digitorum tendon going inwards to the tibia) towards its large muscular attachment to the fibular shaft. The sustentaculum tali acts somewhat as a pulley in this case, lying intermediately both in distance and in position between origin and insertion of the muscles. Between the base of the toe and their attachment to the terminal phalanx neither tendon is specially held down, whereas in the case of the outer toes the tendons of the flexor brevis muscle divide to bind down the longus tendons over the proximal phalanx.

The flexor longus hallucis is constantly in action in an actively motile person, particularly in a child, since it serves to maintain balance at the subastragaloid joint during raising of the heel. If the distal attachment of this tendon were displaced (as by a deviation outwards of the terminal phalanx of the toe), use of the foot could only aggravate the deformity, since the tendon, slipped from its moorings, would constantly tend to drag the tip of the toe further and further out.

On the dorsum of the foot the pull of the extensor longus (in running on tiptoe, with the toes dorsiflexed) would contribute its quota in the same sense. Deflection of the terminal phalanx (once it occurred) must therefore rapidly be followed by deflection and subluxation of the proximal phalanx—hallux-valgus deformity. Such a deformity once established, unless corrected at the interphalangeal joint, could only, with increasing use and strength of the foot, become progressive instead of self-correcting.

An obvious cause for deflection of the terminal phalanx of the great toe in the child from its second year onwards would be a shoe designed without regard to the fact that in children the great toe is longer—i.e., projects farther forwards—than its fellows and in many children diverges from its fellows, its inner border lying medial to the inner border of the foot. This divergence (which must not be confused with a varus deformity) often exists and when present should be taken into consideration, because in all feet the integrity of function of the great toe is a prerequisite of proper walking. Sometimes the great toe is a full half-inch longer than the second or outer toes.† The effect of a round-toed shoe on a child's great toe is depicted in fig. 5. If the great toe is incurved instead of straight, the effect tends immediately to include the metatarsophalangeal besides the interphalangeal joint and is, therefore, aggravated. If the shoe is short as well as round-toed, flexion of the great toe sometimes follows.

Spreading of the metatarsal heads, not cited here separately as a deformity, is an element in several of the lesions I have quoted and in many cases of severe breakdown in adults. If a shoe is well shaped in outline, suitably blocked, but short and, in proportion, broad, in the great majority of cases the great toe, being the longest, will be compressed end on. Cramp of the muscles attached directly to the end phalanx (the extensor and flexor longus) immediately follows, and unnecessary width in the shoe allows separation of the first and second metatarsal heads. Strain on the transverse metatarsal ligaments and adductor transversus hallucis muscle and stretching and compression of the plantar interossei must lead to collapse of the transverse

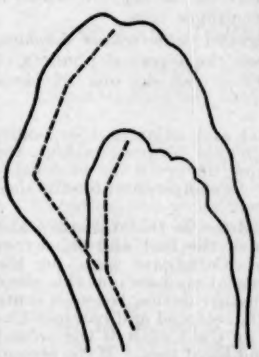

FIG. 4—Outline of fore part of foot of a child, aged 5, superimposed on that of a child aged 14, showing axis of displaced hallux in each.

FIG. 5—Effects of round-toed shoes of different lengths: (1) deviation of end phalanx of great toe; (2) deflection of both phalanges of great toe.

† In 272 of the 281 children cited, the great toe was indubitably the longest of the foot, sometimes overlapping the second by half an inch or more. In 9 cases the second toe was longer than the first, in 6 of which the third equalled the second in length. In 4 cases the second toe was notably shorter than the first and third.

metatarsal arch, the lesion that with hallux valgus distinguishes so many cases of foot-breakdown. The longitudinal arch, anatomically and physiologically conjoint with the hallux, must be almost equally discomfited. A high proportion of children are found to wear too short shoes, often shorter than their feet (because a child's foot allows bending and warping within the shoe without pain). This is because children's shoes are built unnecessarily broad, especially at the heel. If a shoe is long enough, it is often (as shoes are made now) difficult to keep on because of the unnecessary width, and so the mothers have recourse to too short shoes.

If, however, the shoe is well shaped in outline but not blocked up, as in the common sandal and welted type, the effect on the foot is as follows. The child's foot being thicker than the adult's in proportion to its length, and the thickest part of the foot being always the inner section containing the first metatarsal and great toe, if a child's foot is placed in a non-blocked but welted shoe, the effect of the pull necessary to allow room for the thickness of the foot is to detract from the shoe's length and simultaneously to cause warping of the sole (if sufficiently flexible). The sole quickly becomes scaphoid and the inner and outer borders of the foot are removed from the ground, allowing descent of the middle metatarsals, a defect which is commonly described in foot disabilities of the adult. The foot cannot be used in the normal manner in such a shoe, and defects due to faulty distribution of weight are inevitable. Welting of the shoes, very often considerable in front but not carried back beyond the waist, adds to the evils of non-blocking, for it causes the child to walk at a further disadvantage with its toes turned out, bringing relatively extra weight to bear on the big toe, which is already removed from its proper base.

Other deformities associated with valgus displacement of the hallux.—When the terminal phalanx of the hallux is forced out it can do one of three things:—

(1) Displace the second and adjacent toes bodily so that distortion of their axes becomes evident, the fourth and fifth becoming incurved or incurled—i.e., incurved and flexed—to compensate, for the shoe limits lateral displacement.

(2) Underlap the second toe so that this rises and becomes perched on top of the first and third toes (incipient hammer toe). Corns are seen on the summit of the interphalangeal joint even at this stage in some instances, but whether flexion becomes acute and the toe-pad eventually enlarged and hammer-like seems to depend largely on the length of the second toe relative to the first and third toes. If the second toe is short, it may remain elevated but unbent; if long, the tendency to flexion becomes aggravated, and the secondary lesions associated with hammer toe are set in train.

Hallux rigidus is due to a combination of hallux valgus with loss of dorsiflexion at the metatarsophalangeal joint plus extension at the interphalangeal. The typical deformity appeared in 0·3 per cent. of my group of cases as compared with 13 per cent. of incipient hammer toe. A long hallux displaced outwards, with accompanying spasm of the flexor longus hallucis muscle, might explain the initial situation here, independently of considerations involving the outer toes.

(3) Overlap the second toe—a much less common happening owing doubtless to the fact that shoes which displace the hallux because of shortness as well as roundness must often press also on the end of the second toe. To this pressure flexion of the second toe is the easiest response, so that only rarely does the hallux have the opportunity of overlapping the second toe, and then it could only do it by removing the greater part of its own weight-bearing surface from the ground. This embarrassment no foot will choose voluntarily. Children's shoes do not as a rule turn up at the toes, but shoes which do this encourage dorsiflexion of the hallux and automatically in the standing position place a greater burden on the metatarsal head.

The results of (1), (2), and (3) are seen in various typical pressure lesions which bring the patient to the chiropodist and (Creer's cases would indicate) in many instances to the orthopædic surgeon. But it takes years of discomfort and the buying and discarding of many pairs of shoes before most sufferers are brought under review. By that time not only is the original lesion well overlaid but also, owing to the number of secondary deformations that have taken place, may no longer be thought even relevant to the picture. How much better to avoid the necessity for chiropody, resections, and perpetual extravagance in shoes by recognising in childhood the miniature displacements that lead to the greater if the causes go unheeded.

Flattening of the longitudinal arch.—The correctly shaped shoe obviously should follow accurately the anatomical axis of the foot. A shoe which is "straight" from heel to tip will not correspond to the normal child's foot, however carefully blocked to correspond with the child's toes and proportioned in length and width (fig. 6). Children's shoes are commonly built not only on a straight axis but also on an axis which deviates outwards in the fore part of the shoe. This can best be illustrated by bringing a straight pencil forwards along the median axis of the heel and seeing how it meets the fore part. If a child's foot—always soft and relatively non-resistant—is placed in a shoe with a straight axis, the whole fore part of the foot is pushed out of its correct functional bearings, the break coinciding with the waist of the shoe which corresponds to the mediotarsal section of the foot. This condition is comparable with that of a non-rigid bridge, forced out of the true just at its keystone. The body-weight coming down on the inner longitudinal arch is distributed to a part which is the weakest element in the young child's foot, the chief impact being on the inferior calcaneo-navicular ligament, the scaphoid, the bones directly in front, and the ligaments joining these. There is a tendency to "tear the foot apart" at this place. The muscles which share in sustaining the longitudinal arch are already, owing to the altered bearings of their attachments—e.g., the flexor longus hallucis—working at a disadvantage. This is what happens to a foot which, being curved or swung in of itself, is placed in a shoe of which the axis is straight or even deviated slightly outwards from the waist. The infant foot is not built to resist such strains. There can be only one result, foot-breakdown.

FIG. 6—Outline of child's shoe superimposed on outline of child's foot, showing that the shoe does not fit the foot.

A child runs and trips happily on its toes most of the day when it can—i.e., it tends much more often than the more sober adult to have its heels off the ground. When the heel is raised off the ground, there is adduction at the midtarsal joints; the foot turns slightly in, the heels out. This action can be observed from behind when a person rises on his toes; the heels, together in the standing position, move out. Now, if a child has a foot with a natural inward curve in the resting position, and this foot is forced into a "straight" or outwards deviating shoe, what happens to the foot in action? The strain becomes aggravated because the child will (or should) be perpetually trying to run on its toes. A stiff shoe with a wrong axis makes this impossible, and the child's movements are grossly impeded. Hence what one might call the penguin-like or Charlie Chaplin gait, contributed to always by stiffness of the shoe sole and typical of the way in which many children walk.

As a matter of further interest, this point may be carried to adult women. If women will wear high heels, the foot should be perpetually in a position of adduction: the curve of the shoe should be inwards. If women's shoes were made with this inward turn, high heels might not be so disastrous as they are sometimes made out to be; but the English shoe rarely takes this curve.

Weak ankles.—Stability within the shoe is at least as important as correct length and shape. If the shoe is badly balanced in regard to front and heel widths,‡ either the fore part of the foot must be cramped or the heel must slip about and wobble, placing strain on the ankle and subastragaloid joints, a risk inherent in many of the first shoes made for children, in soft kid, which are parallel-sided. The ankle-strap shoe contributes to wobbling, doing nothing to hold the foot and the shoe together. The instep-strap shoe and the lacing shoe keep the arched part of the foot and shoe in correct relation to each other and in contrast prevent any tendency to slipping. Accurate fitting of the arch as such—i.e., heel-to-ball fitting—is not so essential in children as in the adult, but the shoe must be flexible in its waist to allow the necessary movements at the midtarsal joints. The need for freedom and strength of these joints has been seen; this cannot be secured by splinting. The same applies to the use of boots versus shoes. Boots splint, or attempt to splint, the subastragaloid joint, by means of which the leg rocks on the heel. For this joint to be secure, the heel must not drift on the inner surface of the heel of the shoe (cf. what has been said about heel fitting), but free use of the joint is essential for certain swaying movements and for the adapting of the foot in walking to uneven surfaces. Freedom cannot be secured by disuse; therefore, except when lateral movements of the ankle are dangerous, boots are contra-indicated.

PREVENTION OF DEFORMITIES

The following are the essentials in shoe structure to avoid deformity:—

(1) Correct shape corresponding to the outline of the child's foot (the anatomical disposition of the child's big toe being remembered).

(2) Correct length avoiding any pressure on the tip of the toes by the end of the shoe. This means an allowance for clearance and room for growth.

(3) Correct width corresponding to the actual width of the child's foot (which varies considerably) and maintaining the correct proportions in this respect between heel and toes.

(4) Correct depth and blocking to allow for thickness of the child's foot.

(5) Correct axis corresponding to the anatomical axis of the child's foot, or, if anything, allowing for an exaggeration of the natural inward trend to permit of the free adduction that takes place in tripping and running.

(6) Flexibility of the sole to allow full use of all the intermediate joints of the foot.

(7) A solid fastening to keep the foot firmly and squarely set within the shoe.

(8) Socks which in shape, length, and roominess correspond to the proportions of the child's foot (cf. pairs made with right and left to correspond to the shape of the two feet, or the Japanese device of a separate compartment for the big toe).

Finally, in all cases and at all times, the use of shoes should be avoided in childhood whenever possible, to preserve the natural functions of the feet and to escape the traumata which ill-chosen shoes can so easily produce and translate into visible deformities. If children's feet could be preserved intact and made strong and worthy, much labour and suffering would be avoided in later life, and much added efficiency would be given to the nation, with the disappearance of these disabilities that keep the foot clinics multiplying and crowded out today.

‡ The balance should be approximately as ½ or 1½ to 1.

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FRESH AND STORED PLACENTAL BLOOD

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THE increased demand for blood for transfusions has led to the institution of blood-banks. Of the three sources of stored blood (donors, cadavers, and placentas) this paper is concerned with the last.

Placental blood is easily obtained and easily stored, no special organisation and apparatus being necessary. A general hospital with a birth-rate of 40 to 50 a month can thus usually supply its needs for blood for transfusions. The simplicity of the methods described by Goodall et al. (1938), Keller and Limpach (1938), and by Halbrecht (1939) enables any intelligent and well-trained nurse or midwife to collect the blood of the placenta. Only the determination of the blood-groups is the duty of the physician, to prevent any errors, especially in the subgroups A_2 and A_2B.

Placental blood obtained and stored with strict asepsis is no more likely to be contaminated than is the fresh blood of donors.

Butler records a bacteræmia in 5 per cent. of healthy adults—a condition unlikely in placental blood. We found it unnecessary to culture every sample of placental blood, for it was stored at a temperature of 4° C., and so the growth of any possible contaminants was effectively inhibited. Only those bloods should be discarded whose plasma is either cloudy or very hæmolytic, slight hæmolysis being unimportant.

The pooling of bloods for a simple transfusion is an advantage, for it diminishes rather than increases the possibility of a reaction due to incompatibility. A microtransfusion is less apt to cause a reaction than

is a macrotransfusion, for the amount of possibly incompatible substances introduced is proportionally less. A transfusion with pooled placental blood is equivalent to several simultaneous microtransfusions. In most of our transfusions we used bloods from five

TABLE I—AMOUNTS OF ERYTHROCYTES, HÆMOGLOBIN, AND LEUCOCYTES IN FRESH PLACENTAL BLOOD

Erythrocytes (millions)	3–3·5	3·5–4	4–4·5	4·5–5	5–5·5	5·6–6	6–6·5	Total
Cases examined ..	3	..	10	6	7	2	4	32
Hæmoglobin (per cent.) ..	80–90	90–100	100–110	110–115	115–120	..	..	..
Cases examined ..	9	13	13	2	2	..	..	39
Leucocytes (thousands)	5–10	10–15	15–20	20–25	25–20	..	..	..
Cases examined....	4	15	8	3	1	..	..	31

or six placentas, and once as many as thirteen, and in 220 such transfusions we never saw a severe reaction. Dyspnœa was observed in 1 case and chills in 11. In general we observed reactions in only 5 per cent. of our transfusions, an incidence that can also be expected when fresh blood is used.

PROPERTIES OF FRESH PLACENTAL BLOOD

Placental blood has a greater concentration of blood components than has ordinary blood, although we find the figures for hæmoglobin and erythrocytes given by Russian authors, and cited by others, too high. We found an average red-cell count of 4,500,000–5,000,000, often 4,000,000–4,500,000, and only rarely 6,000,000 per c.mm. of placental blood, with corresponding hæmoglobin values of usually 90–100 per cent. (17·2 g. hæmoglobin = 100 per cent.) and rarely 110 per cent. (see table I). The higher figures published by various authors (7,000,000 erythrocytes and 140 per cent. hæmoglobin) we have only found in newborn infants several hours after birth. The leucocyte-counts varied from 10,000 to 25,000 per c.mm. Thrombocytes were normal, and there were many nucleated red cells. Blood-sugar values were similar to those found in adults. Non-protein nitrogen was almost normal, rarely being slightly increased. We often found high uric-acid values, whereas creatinine was usually normal (see table II). There were normal values for globulin, albumin, and fibrinogen. Thus the chemical composition of placental blood is similar

TABLE II—AMOUNTS OF NON-PROTEIN NITROGEN AND URIC ACID IN FRESH PLACENTAL BLOOD

N.P.N.	20–30	30–40	40–50	50–60	Total
Cases	3	9	4	4	20
Uric acid (mg. per 100 c.cm.)..	2–4	4–6	6–8	8–10	..
Cases	10	2	6	2	20

to that of normal adults' blood. For the purpose of transfusions, its only significant characteristic is its high hæmoglobin value, which is not nearly so high, however, as various authors maintain.

Although there are only a few references in the literature to the placental blood's content of anterior-pituitary hormones and œstrin, there is complete agreement that it is remarkably rich in these substances. Soule (1938) found amounts of œstrin in placental blood as high as in maternal blood during labour.

We often noted a prolonged coagulation-time in placental blood; and still more often we observed poor retraction of the clot. Prothrombin-time, determined by the bedside method of Smith, proved normal in fresh placental blood. In stored adult blood Rhoads and Panzer (1939), using Quick's (1938) method, found prolongation of the prothrombin-time. It is likely that there is a similar prolongation of the prothrombin-time in stored placental blood; but we have not as yet investigated this.

Finally, placental blood has a characteristic that makes it especially suitable for transfusion—namely, the lack of agglutinins in about two-thirds of the cases. Placental blood of group O is therefore less likely to cause a reaction than is adult group O blood, for the likelihood that its plasma containing agglutinins of a high titre with the possibility of a resulting reaction is so much less. Group O placental blood can be used, therefore, as a universal donor with less hesitation than adult blood of the same group.

EFFECTS OF STORING

Leucocytes.—The greatest changes take place in the leucocytes, especially the granulocytes, which show beginning destruction at the end of twenty-four hours, the process being almost complete after the sixth or seventh day. Only rare granulocytes remain

TABLE III—AMOUNTS OF FREE HÆMOGLOBIN IN THE PLASMA LAYER OF THE STORED PLACENTAL BLOOD

Hb. (mg. per 100 c.cm.)	0–34	34–68	68–102	102–136	136–170	170–340	Total cases
6th–7th day	6	2	..	..	..	..	8
7th–8th ,,	8	..	1	..	..	..	9
10th–11th ,,	10	1	..	1	..	2	14
12th–13th ,,	..	1	..	3	..	..	4
14th–15th ,,	2	2	3	..	1	..	8
16th–17th ,,	3	2	1	..	..	1	7

intact after the seventh day; all others appear as amorphous masses with no cell structure. The early destruction of the polymorphs is probably a result of autolysis, due to the activity of proteolytic ferments which they contain. It cannot be prevented by any of the conservation methods recommended by various authors. Lymphocytes, possessing no proteolytic ferments, remain almost unchanged up to the seventh day. Later the nucleus shrinks but shows no other changes. The total number of white blood-cells diminishes accordingly up to the fifteenth day, when only 4000–5000 per c.mm. are found, all of them lymphocytes; there is also a decrease in the number of the thrombocytes to 50,000–100,000.

Erythrocytes.—Usually no changes take place in the red cells for the first week; later the number of crab-apple-shaped cells increases from day to day. After the first week of storage rare pale erythrocytes begin to appear. From the fourth to the fifth day the fragility of the erythrocytes begins to increase; so after a fortnight we find hæmolysis beginning in a concentration of 0·68–0·7 NaCl. This merely indicates a widening of the span of resistance to hypotonic solutions, for we find that, whereas some erythrocytes are hæmolysed in a concentration of 0·7 NaCl, the blood on the whole shows no increased fragility of the red cells, and that complete hæmolysis takes place only in the normal concentration of 0·38–0·4 NaCl.

After only a few days of storing placental blood the plasma layer begins to take on a reddish tinge. This

appears to be due to the passage of hæmoglobin from the erythrocytes and not to their destruction, for there is but a slight diminution in their numbers. Anyhow we are dealing here with only small amounts of hæmoglobin that pass from the lower erythrocytes layer to the upper plasma layer. After fifteen days the plasma contains as a rule 0·2–1 per cent. of hæmoglobin and but rarely 1–2 per cent. (see table III). Bloods in whose plasma more than 2 per cent. or 344 mg. per 100 c.cm. of free hæmoglobin was present was suspected of being contaminated by bacteria and was not used for transfusions. With some experience the hæmoglobin content of plasma can be estimated with the naked-eye with sufficient accuracy for all practical purposes.

Besides the free hæmoglobin present in the plasma, there are greater amounts in the lower erythrocytes layer, so that placental blood, mixed, filtered, and ready for use in transfusions, contains a total of 3–5 per cent. (516–860 mg. per 100 c.cm.) of free hæmoglobin. Nevertheless we have no reason to believe that any untoward reaction can have been produced by this free hæmoglobin, for we should then have had more reactions in transfusions with stored placental blood than with fresh blood, and this was not the case.

Blood, to be a reliable therapeutic agent, must fully possess its power to combine oxygen, and we have found that storing does not affect this power in the least. This can easily be demonstrated by thoroughly shaking the blood once, when it immediately becomes bright red. Thus the chief physiological attribute of blood is not affected by storing.

Catalase, and probably all other oxidising ferments of the blood, are released into the plasma with the destruction of the granulocytes and retain their full activity.

There is a progressive diminution in the blood-sugar as a result of glycolysis, reaching a low figure of 10–20 mg. per 100 c.cm. on the fifteenth day of storing. Non-protein nitrogen, uric acid, and creatinine, on the other hand, remain unchanged.

The sedimentation-rate, which is slow in placental blood (0–2 mm. in the first hour and 4–6 mm. in the second with the Westergren tube), is, if possible, still further retarded in stored blood.

SUMMARY

(1) Placental blood, stored up to fifteen days, was used in 220 transfusions. The results were no less favourable than with fresh adult blood used under similar conditions. There were only 12 reactions, chills in 11 cases and dyspnœa and tachycardia in 1.

(2) The only chemical change of importance due to storing the blood for a fortnight was glycolysis, increasing from day to day.

(3) The chief change in the formed elements of the blood consisted in an almost complete disappearance of the granulocytes after the seventh day.

(4) In general the erythrocytes were well preserved; some of them showed from the beginning of the second week changes in form due to shrinking (crab-apple form). The chief physiological function of the erythrocytes, their power to combine oxygen, was preserved.

(5) Slight hæmolysis appeared after several days of storing. It was insignificant up to the tenth day and almost never amounted to more than 1 per cent. (170 mg. per 100 c.cm.) of free hæmoglobin in the plasma. On the fifteenth day up to 5 per cent. (710 mg. per 100 c.cm.) of free hæmoglobin was sometimes found in the plasma. In these quantities free hæmoglobin does not seem to produce any undesirable effect in the recipient.

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M. & B. 693 IN LYMPHOPATHIA VENEREUM

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SINCE the publication of the successful treatment of lymphopathia venereum (lymphogranuloma inguinale) with M. & B. 693 (Earle 1939), I have treated 23 more cases with the same drug. The results have been uniformly successful, as shown by the following typical cases (10 of lymphogranuloma inguinale and 2 of rectal stenosis).

CASE-RECORDS

CASE 1.—A negress, aged 25, seen on March 7, 1939, complained of pain in the rectum, constipation with passage of stools of narrow calibre, and frequency of micturition, beginning two months previously. Nothing abnormal detected in the cardiovascular, pulmonary, and central nervous systems. A well-marked rectal stricture, 3 cm. above the anus; palpation of it produced considerable pain. No lesion found in the genitalia, and no sign of adenitis in the groins. Frei reaction positive. No abnormal urinary constituents.

Treatment and progress.—She was given M. & B. 693, four 0·5 g. tablets daily for five days, and liquid paraffin. On March 14 she reported less rectal pain but continued frequency of micturition; examination of the stricture revealed far less pain and spasm than before. A second course of M. & B. 693, similar to the first, was given. On the 29th frequency of micturition had disappeared and rectal pain was negligible. Constipation had been relieved, and the calibre of the stool had increased. Rectal examination provoked very little pain and showed that the stricture, though still present, was of wider calibre and caused no spasm. M. & B. 693, 2 g. daily for five days, was given, and no relapse has been reported to date.

CASE 2.—A negress, aged 26, seen on March 9, 1939, complained of pain in left groin. Examination showed a papillomatous mass arising from the left labium minus, an ulceration of the right labium majus, enlarged inguinal glands in the right groin, and a broken-down gland mass, with sinuses, in the left groin. Pain in the left hepatic area, and spleen enlarged. Blood films showed no malarial parasites. Reenstierna test negative, and Wassermann and Frei reactions positive.

Treatment and progress.—On the 9th a course of M. & B. 693, four 0·5 g. tablets daily for five days, was begun. Seen again on the 15th the sinuses in the left groin were smaller, with less purulent exudate; the ulcer of the right labium minus was paler, less ready to bleed, and practically painless on palpation. M. & B. 693, four 0·5 g. tablets daily, was again given for five days. On the 21st when the patient was seen the sinuses were scabbed over, the labial ulcer had healed, and the papillomatous mass of the labium minus was smaller, painless, and non-

hæmorrhagic. The spleen was smaller. A further course of M. & B. 693, similar to those preceding, was given, but after this the patient could not be traced.

CASE 3.—A negress, aged 36, seen on March 22, 1939, gave a history of several months' constipation, with passage of flattened stools, mucus, and blood. Right cornea opaque, the result of an old syphilitic keratitis; there was an umbilical hernia, which had increased in size since force had had to be used to defæcate. Rectal examination showed a stricture, of rubber-like consistence, 4 cm. above the anus. Frei reaction positive. No pathological protozoa or helminths found in stools.

Treatment and progress.—On the 22nd a course of M. & B. 693, four tablets of 0·5 g. daily for five days, was begun. On the 29th the patient reported that defæcation was easier, and that less blood and mucus were passed. A second course of M. & B. 693 was given. After this, rectal examination showed a much softer stricture, of wider calibre. Mucus and blood were no longer passed. On April 14 examination showed a further improvement of the condition and a third course of M. & B. 693 was started. A tolerable condition of life is now being maintained by keeping the stools soft with liquid paraffin.

CASE 4.—A mixed creole male clerk, aged 20, seen on April 12, 1939, gave a four days' history of bilateral inguinal swelling. No lesions found in the cardiovascular, pulmonary, and central nervous systems. In each groin there was a bubo as large as a walnut, tender, but not attached to the skin. No primary sore discovered. Frei test positive. Reenstierna test negative.

Treatment and progress.—The patient was given five 0·5 g. tablets of M. & B. 693 daily for four days. On the 14th the buboes were smaller and on the 17th smaller still and painless. On the 24th the buboes were as small as a filbert and painless. A second course of M. & B. 693, four 0·5 g. tablets daily for five days, was followed by complete recovery.

CASE 5.—A negro rigman, aged 32, seen on March 24, 1939, complained of a three days' swelling in the right groin. No abnormality in cardiovascular, pulmonary, and central nervous systems. A bubo the size of a walnut in the right groin, unattached to the overlying skin. No primary lesion found. Frei test positive. Reenstierna test negative.

Treatment and progress.—The patient was given M. & B. 693, five 0·5 g. tablets daily for four days. He was not seen again until April 6, when he reported that he was better. No bubo was found on examination. He has been seen at fortnightly intervals since; there has been no recrudescence.

CASE 6.—A negro labourer, aged 24, seen on April 5, 1939, complained of a five days' swelling in the left groin. No lesions found in cardiovascular, pulmonary, and central nervous systems. A bubo, 1½ in. long, present in left groin, non-adherent to skin but painful on palpation.

Treatment and progress.—The patient was given M. & B. 693, four 0·5 g. tablets for five days. On the 14th the bubo was reduced to the size of a filbert and was painless on palpation. The patient complained that since taking M. & B. 693 he had suffered greatly from insomnia. He was given a second course of M. & B. 693, similar to the first, together with Nembutal gr. 1½ at bedtime. No relapse and no ill effects of the drug were observed.

CASE 7.—A negress, aged 17, seen on May 21, 1939, complained of pain and swelling in the left groin. Nothing abnormal found in cardiovascular, pulmonary, or central nervous system. Temperature 100·2° F. and pulse-rate 68. A bubo, tender, soft and non-adherent to adjacent tissues in left groin. Frei reaction positive.

Treatment and progress.—The patient was given M. & B. 693, five 0·5 g. tablets daily for four days. On the 25th she complained of epigastric discomfort, which was held to be due to the drug. The bubo was smaller and harder but still painful. On the 30th the bubo was small and painless, and it finally disappeared after a further five-day course of M. & B. 693.

CASE 8.—A negro garden boy, aged 15, seen on May 31, 1939, complained of pain and swelling in the right groin. Apart from this no pathological conditions were discovered. The bubo was fluctuating, adherent to the overlying skin, and tender on palpation. Frei reaction positive.

Treatment and progress.—The patient was given M. & B. 693, five 0·5 g. tablets daily. On June 5 the bubo had decreased in size and was painless. The dosage of the drug was now reduced to four tablets daily, and on June 12 the bubo had disappeared.

CASE 9.—A male negro labourer, aged 28, seen on March 13, 1939, complained of pain and swelling in the left groin. Apart from a hard bubo adherent to skin and deep structures no other lesions were found. Frei reaction positive.

Treatment and progress.—The patient was given M. & B. 693, six 0·5 g. tablets daily, and on the 16th the bubo was smaller. Because the M. & B. 693 had caused epigastric discomfort and nausea, the dosage was reduced to four tablets daily. On the 23rd the bubo was fluctuating. Aspiration was refused. Dosage of four tablets daily was continued, but on the 29th the overlying skin ruptured (aided by energetic poulticing by the patient against my orders). The dosage of M. & B. 693 was now increased to five tablets daily, but healing was not completed until April 12.

CASE 10.—A negro rig-builder, aged 30, seen on March 24, 1939. A small, hard, non-adherent, and non-fluctuating bubo in right groin. Frei reaction positive. M. & B. 693, five 0·5 g. tablets daily, was given. Excellent progress was made, and the bubo had completely disappeared by April 6, 1939.

CASE 11.—A negro labourer, aged 25, seen on June 6, 1939. A hard painless non-adherent bubo, the size of a filbert in left groin. Frei reaction positive. M. & B. 693, five 0·5 g. tablets daily, was given. Improvement was rapid, and the patient began work again on June 13 but was given a further four days' supply of tablets as a precautionary measure.

CASE 12.—A male East Indian clerk, seen on April 24, 1939, complained of having had fever for two days, a bubo in the left groin for two days, and a sore on the penis for four days. Infecting coitus had taken place about ten days previously. Was puny and emaciated, with pallor of buccal and conjunctival mucosæ. No lesions found in cardiovascular, pulmonary, and central nervous systems. A small hard bubo, non-fluctuating and non-adherent, in left groin. A small herpetiform ulcer 3 mm. in diameter on foreskin. Blood films showed *Plasmodium vivax*. Frei reaction positive.

Treatment and progress.—M. & B. 693, five 0·5 g. tablets daily, was given. On the 28th the patient complained of extreme weakness and of epigastric discomfort. This was probably due to the drug. The bubo was already smaller, but the penile lesion showed no change. A course of Atebrin, 0·1 g. thrice daily, was started on this date. During the administration of atebrin (five days) the course of M. & B. 693 was suspended, but it was begun again on the completion of the course of atebrin. Cure was complete on May 10, 1939.

DISCUSSION

The value of sulphonamides in combating lymphopathia venereum in experimental animals has already been shown by MacCallum and Findlay (1938), Bär (1938), and Levaditi (1938a, b, c). Human infections have been successfully treated by Laird (1938), Gjurić (1938), Montel and Nguyen-Van-Tho (1938), Domagk (1937, 1938), and Kubitzki (1938). Successful results with M. & B. 693 have been recorded by Earle (1939a, b), Weissenbach and Temine (1939) and Durel, Linglin, and Desmazes (1938).

In the series described above it will be seen that most of the types of lymphopathia venereum have been treated, except gross elephantiasis of the vulva and rectal stricture in the male. The absence of the latter is explained by the rarity of pederasty in Trinidad (Patrick 1938).

The optimal therapeutic stage is during the early days of the inguinal adenitis (Earle 1939a, Manson-Bahr 1939). When fistulæ have formed, treatment is prolonged. In the female the best results are obtained during the stage of adenitis, but even in later stages treatment is of value. In cases 1 and 3 rectal stricture was favourably influenced, a finding also reported by Shropshear (1938) and Knight and David (1939). The rubbery consistence of these strictures indicated that they were at an early stage (Stannus 1938). In the late sclerosed fibrotic stage, as well as in long-standing cases with elephantiasis, the drug is probably of less value.

A feature of treatment of lymphopathia venereum with M. & B. 693, which I have had no chance to study, but which is worthy of trial by those who have the opportunity, is the sterilisation of female carriers. These often have no obvious clinical signs (Naumann 1931) but invariably show a positive Frei reaction (Gregorio 1932, Ferrer 1938). The treatment of inmates of brothels in tropical ports, who probably form an important focus for the maintenance of lymphopathia venereum, might be of value in reducing the incidence of infection in the male.

The most satisfactory dosage of M. & B. 693 in this condition appears to be five to six 0·5 g. tablets daily for five days. Ill effects due to the drug do not necessarily call for a reduction in dosage; only when these are unpleasant—e.g., vomiting and severe vertigo—should the dose be reduced. After a five-day course has been completed, an interval of three to four days should be allowed, after which a further course of M. & B. 693 can be given. Further courses at intervals depending on the response can be given.

The slower therapeutic response to M. & B. 693, when fistulæ have formed is explained by the drug's comparative inactivity towards "rough" secondary invaders (McIntosh and Whitby 1939).

SUMMARY

(1) The beneficial results of treatment with M. & B. 693, in five-day courses of five to six 0·5 g. tablets daily in 12 illustrative cases of lymphopathia venereum (2 of rectal stenosis in females and 10 of lymphogranuloma inguinale) are described.

(2) The best results were obtained when treatment was begun in the stage of adenitis.

(3) When fistulæ have been formed, cure with M. & B. 693 is slower, probably because it is less effective against "rough" secondarily infecting organisms.

(4) It is suggested that the inmates of brothels should be prophylactically treated with M. & B. 693.

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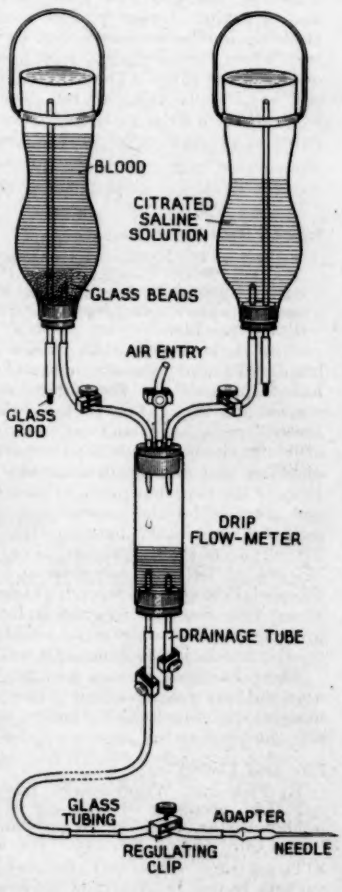
A DRIP FLOW-METER FOR TRANSFUSION

BY S. ROODHOUSE GLOYNE, M.D. Leeds, D.P.H.
AND
PHYLLIS M. TOOKEY KERRIDGE, Ph.D. Lond., M.R.C.P.
(*From the Pathological Laboratory, St. Margaret's Emergency Hospital, Epping, Essex*)

THE equipment supplied for the administration of blood in the London and Home Counties Emergency Blood Transfusion Service comprises glass bottles, with handles by which they can be inverted and suspended, and two-holed rubber bungs to fit them. Through the holes pass glass tubes: one long enough to reach the bottom of the bottle and act as an air vent, and the other, which is short, attached to 3 ft. of rubber tubing with a spring clip thereon. Needles are provided for insertion into the vein of the patient and to be joined to the free end of the rubber tubing. Glass beads are placed in the bottle to retain clots of blood.



To start a transfusion with a small volume of a saline solution and to give blood at the rate of about 50 drops a minute, the rate being easily controlled and readily measured, the apparatus can be assembled as shown in the accompanying figure. Two of the standard bottles and tubes are used: one to contain citrated blood and glass beads, and the other a sterile citrate-saline solution (sodium

DR. EARLE: REFERENCES (*continued*)

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citrate 1·05 per cent. in sodium chloride 0·85 per cent.). The long glass tubes of the bottle are closed, before the transfusion begins, by rubber tubing and a glass-rod plug. This arrangement prevents any fluid from entering the tube while it is being inserted into the bottle during the assembly of the apparatus. Although such fluid may be removed by pressure or suction, its presence is undesirable, because sometimes a film of fluid remains and forms alternately an obstructing drop or a film, as the air passes it, leading to an irregularity of blood-flow. The short glass tubes are attached to a simple double-drip flow-meter made in the laboratory. This has been provided with both an air-entry tube and a drain. Under perfect conditions neither of these should be necessary, but in practice the blood level often rises during a prolonged transfusion and obscures the drop. The initial level can usually be restored by admitting air but sometimes more easily by draining a little of the fluid away. With the air entry at the uppermost part of the vessel there is no risk of air entering the glass drip-tubes or making a froth, as sometimes happens with cannulæ with a lateral air entry. The drip flow-meter is inserted about 6 in. below the bottles. This position ensures that it is kept vertical and allows the level of the fluids in the bottles and the rate of dropping to be assessed in the same glance. This interval is large enough to allow the bottles to be shaken or to be easily exchanged when a fresh supply of blood is needed. The insertion of a short glass tube in the rubber tube below the flow-meter makes it possible to see when the fluid has reached the end of the tube and that there are no bubbles. The metal adapter (see figure) renders it much easier to fit the rubber tubing on to a needle in a vein without leak or jerk.

We thank our colleagues Dr. W. L. Yell, medical superintendent, Mr. Mortimer Woolf and Mr. P. Wright, surgeons to the hospital, and Mr. Brendon Moore and Mr. O. W. Chapman, house-surgeons, for their help in discussion and criticism.

REVIEWS AND NOTICES OF BOOKS

Diet in Health and Disease

Edited by Sir HUMPHRY ROLLESTON, Bt., G.C.V.O., K.C.B., M.D. Camb., F.R.C.P., and ALAN A. MONCRIEFF, M.D. Lond., F.R.C.P. London: Eyre and Spottiswoode for the *Practitioner*. 1939. Pp. 382. 14*s*.

THIS is the fourth of the series of the *Practitioner* handbooks and consists of articles on diet which have appeared in the columns of that journal, revised and brought up to date. Most of the articles are by specialists who treat dietetically various disorders of the body, but the theoretical and practising dietitian and the biochemist also have their say. Despite the fact that much of dietetics in medicine is, and must be for the present, empirical, there is considerable concinnity between the different authors. The advice of the empiricists lacks the precision of the biochemist, but often has more of a dogmatic quality. Of special interest are the articles on diet of childhood, breast and artificial feeding of infants, and diet in pregnancy. The only serious omission is an article on diet in relation to bones and teeth.

There has long been a need for a book by reputable authors describing the theory and practice of medical dietetics in this country, and this handbook fills the need well.

Life and Living

By FREDERIC WOOD JONES, D.Sc. Lond., F.R.C.S., F.R.S., professor of anatomy in the University of Manchester. London: Kegan Paul, Trench, Trübner and Co. 1939. Pp. 268. 10*s*. 6*d*.

THESE are occasional lectures delivered before various bodies in Australia between 1923 and 1937. "Mechanism or Vitalism?" is the first paper, which both names and states the author's main theme. This is developed from various aspects later and it runs through the whole book. "The Spirit of Adventure" and "Universities and Life" deal with the historical background and the present performance of the British university, whose system of education too often succeeds in quenching instead of quickening the love of intellectual adventure. "Disease and Individuality" brings the facts of embryology to the support of the old doctrine of diathesis, though more as circumstantial evidence than as proof. "The Master Surgeon" is an attempt to trace a common outline in the great historical figures of surgery—men of large physique who liked living in a large way, men of great energy and self-reliance yet with a curious thread of religious feeling running through their lives, men who fulfilled well the old Italian prescription for a good surgeon, that he should have "the eye of an eagle, the heart of a lion and the hand of a woman." "The Mammalian Toilet" is a fascinating description of how sundry animals keep their teeth and ears and coats clean, and of the structural modifications that they seem to have developed for that purpose; it culminates in the observation that the slope of the hair in the human scalp is the result of many generations of combing, with fingers or with implements—a conclusion which, as the author is well aware, has wide and unorthodox biological implications. Few professors can produce on special occasions lectures which are so scholarly, instructive, entertaining and provocative as these.

Electrocardiograms

An Elementary Atlas for Students and Practitioners. By H. WALLACE JONES, M.Sc., M.D., F.R.C.P., senior honorary physician and physician in charge of the heart department of the Royal Infirmary (Royal United Hospital), Liverpool; and E. NOBLE CHAMBERLAIN, M.Sc., M.D., F.R.C.P., physician to outpatients and to the heart department of the hospital. Bristol: John Wright and Sons. 1939. Pp. 51. 3*s*. 6*d*.

IN this small book the student is introduced to the complex subject of electrocardiography by means of forty-nine figures representing the better-known and commoner abnormalities. The clear tracings serve their purpose well, and the student or practitioner will find them quite adequate for his needs.

Physiology of the Uterus

By SAMUEL R. M. REYNOLDS, M.A., Ph.D., fellow of the John Simon Guggenheim Memorial Foundation in the University of Rochester school of medicine and dentistry, New York; associate professor of physiology in the Long Island college of medicine, Brooklyn, New York. London: Hamish Hamilton Medical Books. 1939. Pp. 447. 42*s*.

AFTER reading this book and examining the list of nearly 1200 references to original papers, one realises with something of a shock how grossly the uterus has been neglected by the writers of textbooks. It is also surprising that it has aroused so little enthusiasm among physiologists as an object of research, and that the enormous amount of work which has, in fact, been done on it has touched off none of those trains of controversy which from time to time bring subjects

into the limelight and contribute so much to their advancement. Every chapter in Dr. Reynolds's book raises important and unsolved problems, many of which will now receive recognition for the first time. But the book is more than a starting point for and stimulus to research. It is an extraordinarily skilful compilation of existing knowledge, and some of the chapters, such as that on patterns of uterine mobility, are so completely and smoothly descriptive that it is difficult to realise how scattered and independent are the sources from which the author has gathered his information. The growth, hormonic control, circulation, metabolism and innervation of the uterus and many related subjects are carefully considered, and so much of significance emerges that no obstetrician or gynæcologist can claim an adequate scientific background for his work unless he is aware of the contents of the book.

Preclinical Medicine

By MALFORD W. THEWLIS, M.D., attending specialist, general medicine, United States public health hospitals, New York City. London: Baillière, Tindall and Cox. 1939. Pp. 223. 13*s.* 6*d.*

ENGLISH readers will expect this book to be concerned with the student's studies before he reaches ward and outpatient work, but this is not its purpose at all. Dr. Thewlis is describing here the preliminary factors concerned in disease before symptoms appear and indeed before pathological changes have developed. This is an aspect of medicine not only of extreme importance but of great complexity. How far periodical examination of healthy people may allow detection of changes before disease has really begun, and how much undue attention to minor alterations in physical wellbeing may lead to neurosis, are debatable points. Certainly it is possible to err on the side of over-caution. Some of the more questionable recommendations here put forward are a protective regimen against appendicitis, examination of the prostate twice a year for every man over forty, and disease studies before marriage. On the other hand Dr. Thewlis has gathered together many simple yet almost certainly effective bits of advice which are often forgotten.

Skeletgroei en Interne Secretie

By Dr. LEON H. LEVIE. Assen: Van Gorcum and Co. 1939. Pp. 68. Fl.2.90.

THIS little monograph summarises the recent researches of Dr. Levie and his colleagues in Amsterdam on the mode of action of the anterior pituitary growth hormones. The first part deals with the methods used for the assay of their preparations and the evidence for regarding the growth hormone as purely chondrotrophic—i.e., acting purely on the proliferating cartilage bone. This part of the book is more readily available to English readers in an article in the first number of the *Journal of Endocrinology*. The excellent microphotographs appear to substantiate the author's claims, but it is presumed that other factors enter into the pituitary control of growth since their preparations have no effect on membrane bones such as those of the skull. It is difficult to understand the facial changes in acromegaly on this hypothesis. By repeated injections of growth hormone over 12 months in rats, giant animals are being produced, but Dr. Levie explains the frequent failure of hormone therapy in human dwarfs by the fact that though their epiphyseal junctions are often open they must be considered as functionally closed owing to the transverse bony plates on either side of the epiphyses.

The second half of the book is concerned with the depression of growth rate in rats produced by massive œstrone and stilbœstrol injections. The author finds that while this action of œstrone can be inhibited by simultaneous injection of growth hormone the same does not apply to stilbœstrol. This observation suggests that stilbœstrol in these large doses may act directly on bone growth and not just as a pituitary antagonist. There has been other evidence that stilbœstrol may directly affect tissue metabolism. The previous literature is reviewed with a fairly wide bibliography and there is an English summary.

Nursing in Time of War

By P. H. MITCHINER, C.B.E., T.D., M.D., M.S., F.R.C.S., honorary surgeon to the King; surgeon and lecturer in surgery at St. Thomas's Hospital; and E. E. P. MACMANUS, O.B.E., S.R.N., S.C.M., matron to Guy's Hospital. London: J. and A. Churchill. 1939. Pp. 169. 1*s.* 6*d.*

THE writers of this excellent little book both had great experience during the last war, and both have worked with the Territorials between the wars. They are therefore eminently suited to compile such a work and they have done it well. Nurses, laymen and laywomen in the auxiliary services, and young—and even old—members of the medical profession will find it a good eighteen-pennyworth. They must not expect to find in it details to fit every occasion, but it aims to lay down general principles on which these can be worked out. Doctors might particularly note the paragraph dealing with records. So many claim that it is their job to treat the patient and not to fill in forms, but the accuracy of casualty lists hinges on the record made at the first station to which a person is taken, and inaccuracies or omissions there may be a source of distress to relatives and friends for months afterwards.

Operative Dental Surgery

(4th ed.) By J. B. PARFITT, L.R.C.P., L.D.S., consulting dental surgeon to Guy's Hospital, London; and W. E. HERBERT, L.R.C.P., L.D.S., professor of dental surgery in the University of London at Guy's Hospital medical school. London: Edward Arnold and Co. 1939. Pp. 477. 25*s.*

IN this edition more space is given to gold inlays, the technique of which has now so much improved that the acquisition of skill in this kind of restoration both for single fillings and as a basis for small bridges on vital teeth has become an essential part of dental training. The greater part of the book is, as before, concerned with the repair of teeth by filling and crowning, but short practical sections on scaling, extractions, minor surgical operations and local anæsthesia are also included. All these have been revised, and in many parts the text is entirely new. As a textbook for students this work will hold its important place; and dental practitioners will value it for its excellent advice on everyday problems such as surgery-lighting and the details of modern improvements in procedure.

Training for Childbirth

By MINNIE RANDELL, S.R.N., S.C.M., T.M.M.G., principal of the school of massage and sister-in-charge of the department of physiotherapy, St. Thomas's Hospital, London. London: J. and A. Churchill. 1939. Pp. 151. 7*s.* 6*d.*

FOR some years Miss Randell has been testing and developing a practical training for the effort of childbirth and for rapid postpartum recovery. She contends that if the prospective mother thoroughly understands the processes of pregnancy and birth, and is taught how to use her muscles, and when and

how to relax, she will assist herself efficiently with full confidence. In the first chapter Miss Randell presents in an able and interesting fashion the anatomy and physiology of labour. Every young woman should read this admirable summary, for in spite of modern frankness few girls have a sound grasp of Nature's preparations for maternity. On this basis Miss Randell proceeds to formulate exercises for special muscle strengthening, methods of relaxation and certain positions of the body to ease and assist labour pains. She advocates seated or squatting positions in the earlier stages, and a kneeling or prone attitude when in bed. To prove her points she gives a series of letters and diaries of first labours from many of her own students and patients. Finally she deals with postnatal treatment and illustrates with photographs the rapid return to a lithe normal figure when her methods are followed. Nurse, masseuse, general practitioner and patient will all appreciate this book.

Medical Societies

ROYAL SOCIETY OF MEDICINE

SECTION OF LARYNGOLOGY

AT a meeting of this section on Dec. 1, Prof. MARKUS HAJEK gave a demonstration on some specimens illustrating the anatomy of the accessory sinuses of the nose. These specimens were the few that he had saved out of over a hundred that he had used for teaching during the last fifty years. At the end of the demonstration he presented the specimens to the Royal College of Surgeons in gratitude for the hospitality that this country has shown him in his old age. These specimens will form a valuable addition to the college collection. Mr. T. B. Layton, the president of the section, accepted the gift in the name of the college. The section then considered a series of cases designed to illustrate various points in the diagnosis and treatment of

Orbital Complications of Acute Sinusitis

Mr. H. G. PERCY described a case of recovery from meningitis in which the white cells had gone up to 2000. She had been treated with sulphanilamide and the temperature had been down for nine days, when it rose again and the swelling was incised without finding pus and without benefit. Subsequently an external frontal-sinus operation had been done, after which the patient had got well. There was some doubt as to whether she had done so as a result of the operation, for the temperature had already begun to fall before it was done. Indeed, there was some doubt as to whether the orbital lesion was due to sinusitis or to a stye on the lower eyelid present on admission.

Mr. ERIC PEET showed a case at the other end of the scale of a lady who had attended Eights Week at Oxford with an orbital swelling, and had gone to her doctor only when the social festivities had ended. From the swelling which presented at the outer angle of the orbit he had obtained pus from which he grew Pfeiffer's bacillus. Through this wound he had felt a probe slip through a hole into the frontal sinus. An external frontal-sinus operation had been performed some six weeks later with success. Mr. Harold Kisch showed two cases, one of a small girl in whom an external frontal-sinus operation had been performed owing to a recurrence of symptoms on the fifth day. The resultant scar was almost invisible. Mr. Kisch's other case was that of a young man in whom all the symptoms had subsided without operation except for a slight proptosis of the left eye, which was still present after six weeks.

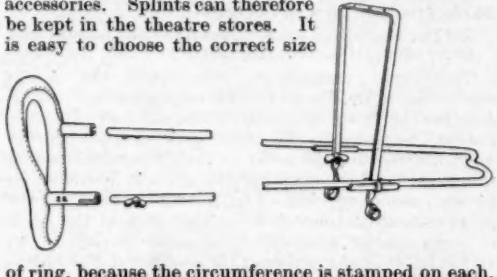
The PRESIDENT drew attention to what he believed to be the fact, that there are three such lesions: (1) an intra-orbital extra- or sub-periosteal abscess; (2) an inflammation, with or without suppuration, of the cellular tissue around the optic nerve; and (3) an infective thrombosis of one of the ophthalmic veins, usually the superior.

Mr. WATSON WILLIAMS laid stress upon movements of the eye, which in the subperiosteal abscess were retained and in the cellulitis disappeared. Mr. Mill thought the cellulitis must be very rare for he had not, as yet, seen a case. Chemosis was discussed, and cases of subperiosteal abscess in which this had been alarming were mentioned. No reply was forthcoming to a question by the President as to the value of the examination of the discs. On the question of treatment the balance of opinion seemed to be in favour of what the President called the wait-and-see method, but for which Sir StClair Thomson preferred the more parliamentary expression expectant. Mr. Leslie Powell and Mr. Harold Kisch advocated early operation. The latter pointed out that by this he meant more than a simple incision, and he would advise opening the frontal sinus. He thought that the life of one of the patients shown by the President had been endangered by delay in operating. To this the President replied that the patient's life had already been endangered so much by the disease that he had thought it would be terminated by an operation before there was any evidence of localisation. With this little passage of arms the meeting ended.

New Inventions

A MODIFIED THOMAS SPLINT

A MODIFIED Thomas splint, the details of which are shown in the diagram, has been in use at St. James's Hospital, Leeds, for two years. The apparatus is valuable because the parts of many splints can be stored in a small room, a cupboard 52 in. high, 32 in. wide and 24 in. deep, with a drawer 12 in. deep at the bottom, being sufficient to hold forty splints and their accessories. Splints can therefore be kept in the theatre stores. It is easy to choose the correct size



of ring, because the circumference is stamped on each, and the ring can be easily fitted, if necessary, before any manipulation of the limb. The foot piece is rigid, and cords may be attached to it for suspension of the splint. It fits inside the extension arm because this best suited our Kirschner wire hoops, but it may pass outside equally well. Extension arms of various lengths may be fitted to any ring, and a specially short one, 21 in. long, has been found satisfactory for the application of traction through the olecranon with the elbow at right angles.

The apparatus has been made for me by Taylor and Higgins, Cookridge Street, Leeds.

H. AGAR, M.B. Leeds, F.R.C.S.

THE LANCET

LONDON: SATURDAY, DECEMBER 16, 1939

APICAL SCAR

THE post-mortem evidence of healed tuberculosis has always caused serious differences of opinion amongst morbid anatomists—as great in fact as the evidence for the early lesion, apical or subapical, has amongst clinicians. The Swiss statistics are generally quoted as the standard example of the doctrine that the vast majority of people show signs of obsolete tuberculosis at autopsy. REINHART'S figures for Berne were 98·38, and NAEGELI'S for Zurich, perhaps the most frequently cited of all tuberculosis statistics, 71 per cent. British records are not numerous; the most recent are those of TODD for Edinburgh in 1926–27, which showed nearly 70 per cent. of lesions, of which between a sixth and a seventh were active. These figures have formed a valuable background and control for the tuberculin tests made on cross-sections of the general population of our great cities during life, and they have been of some importance in assessing the records of chest radiology. But when we put the concrete question what are the unequivocal signs of obsolete tuberculosis in the lung and pleura, it is not so easily answered. On what signs, for example, did REINHART and NAEGELI base their conclusions? Apart from calcification, the end-results of the collagenous reaction of the healing lesion is fibrosis, be it in the form of puckered scars, adhesions or mere pleural thickening, and in so far as the fibrosis is effective in arresting the tuberculous process it is apt to be equally successful in obliterating the evidence of its cause. Thickening of the apical pleura is a case in point. Before the days of good chest radiograms great stress was laid on the physical signs of contracted apices, impaired percussion note and harsh breath sounds, and many a patient was wrongly diagnosed tuberculous. Then the German radiologists rediscovered the subapical lesion (Frühinfiltrat) which KINGSTON FOWLER had noted in the post-mortem room years before and which we had most of us forgotten, and the apical scar faded into the background.

Recent work from the department of pathology of the University of Manchester goes far to show that not only are the majority of apical scars non-tuberculous but that they are due to silica. In their original paper DAVSON and SUSMAN [1] described the results of an investigation by ordinary histological methods as well as by the method of micro-incineration of the apical region of the lungs from 107 consecutive autopsies, excluding only 13 cases in which gross pulmonary disease was present. The ages ranged from under four to over seventy. The amount of silica present was estimated roughly by visual comparison, under polarised light, of incinerated sections 5μ thick. Siliceous matter was present in nearly all cases, but in general the amount increased with age. A moderate amount was first seen at twenty-five years of age, and a large amount at about fifty—results which correspond closely with the chemical analyses of normal lungs carried out by BELT, IRWIN and KING [2] and with those of JEPHCOTT.[3] There was also a close correspondence between the amount of silica and the amount of carbon. Apical scars without evidence of healed tuberculosis (type A scars) were present in 40 of the 94 cases investigated, while scars with evidence of healed tuberculosis (type B scars) were present in 6. The commoner type A usually occurred exactly over the apex, and was firm, smooth and greyish-white, with variable degrees of puckering but without any sign of caseation or calcification on section. Pleural adhesions were commonly absent. The rarer type B scar as a rule appeared as a depressed fibrous puckering on the surface of the apex, usually with a firm localised adhesion to the parietal pleura, and contained on section either caseous or calcified foci. In three cases both types were present at an apex. Histologically, type B scars gave clear evidence of healed or quiescent tuberculosis, mainly one or more necrotic areas showing varying amounts of calcification, in all cases surrounded by a well-defined fibrous capsule. In the type A scars the most striking feature, apart from the fibrosis, was the remarkable degree of elastic-fibre proliferation. In 13 cases actual silicotic nodules were demonstrable microscopically. These all belonged to later age-groups and all had a high silica content in the lungs generally. In addition a definite relationship was shown to exist between the accumulation of siliceous dust in the upper part of the lung and the presence of type A scars. In the whole series of 94 cases there was none whose occupation appeared to predispose to silicosis.

DAVSON [4] has now studied the early stages of apical scar development. He finds that the earliest stages of type A fibrosis are recognisable in subjects as young as ten years, and that some degree of type A fibrosis is present in nearly every young adult. The study of these early changes has failed to show any histological evidence of the participation of an active tuberculous process except in cases of generalised tuberculosis, and in only 2 cases in the whole series was there definite evidence of healed tuberculosis in or near the apical pleura. Therefore, since complete continuity between the earliest changes and the more advanced type A scars has been traced, little justification exists for the view that tuberculosis plays any part in the ætiology of these lesions. There may be a doubtful group in which scarring is associated with dense adhesion to the parietal pleura and in which there is neither caseation nor calcification, but apical scars should only be

1. Davson, J., and Susman, W., *J. Path. Bact.* 1937, **45**, 597.

2. Belt, T. H., Irwin, D. A., and King, E. J., *Canad. med. Ass. J.* 1936, **34**, 125.
3. Jephcott, C. M., *Canad. publ. Hlth J.* 1935, **26**, 606.
4. Davson, *J. Path. Bact.* November, 1939, p. 483.

regarded as certainly tuberculous if they contain foci of caseation or calcification.

A CENTRAL HOSPITAL FUND

IT is inevitable that the war will make changes in the structure of British medicine, and throughout the recent discussion in our correspondence columns many must have felt, first that the problem should be considered from a national and not a local angle, and secondly that an ounce of experiment was worth a pound of speculation. To all such it must seem that Lord NUFFIELD, with that nous for which he has become justly famous, has made possible just such an experiment. The Nuffield Medical Scheme indicated that a modern clinical school should be based on the fundamental sciences, rather than that the preclinical school should be the poor sister of the hospital. Nuffield College came into being to develop social science in this country by bringing the academician and the entrepreneur in living contact with each other. The PEP report on the British Health Services (1937) made numerous references to the facts that health problems may involve a complex of social and economic considerations and that research on organisation is sorely needed. At present three separate groups are concerned in the supply of hospital services in this country—the voluntary hospitals, the public authorities and the Ministry of Health. The ministry's incursion is the result of the war, which has enforced one of the main recommendations of the report of the Voluntary Hospitals Commission under the chairmanship of Viscount Sankey in 1937—the division of the country into hospital regions. The Sankey commission also recommended the formation of hospital regional councils to correlate hospital work and needs in the regions, and the formation of a central hospitals' council to coördinate the work of these regional councils. It was realised that such a reorganisation of the hospital services of the country could not be undertaken or the regionalisation scheme be fully implemented unless accompanied by coöperation with the local authorities and the state. It can therefore be expected that such regional hospital councils would survey and coördinate the hospital services within their regions and consult the local authorities in matters of common interest.

The new Nuffield benefaction of a central fund for financial regionalisation may in a sense be regarded as a hospital fund for the provinces, including Scotland and Northern Ireland, analogous to the King's Fund in the London area. But it is even more the endowment of a project for research in social organisation. Money talks, and no social experiment can make progress without a financial backing. The lines of advance are already evident from recent happenings in Oxford. The Oxford and District joint hospitals' board consists of members of the governing bodies and medical staffs of the associated hospitals, representatives of the local authorities and the contributory schemes, and members nominated by the university, the medical school, the British Medical Association and other bodies. It is becoming the rule for all questions relating to the coördination or extension of hospital services or the development of institutional and clinical medical services in the Oxford district to be referred to this board. Contact has been made with the survey committee of Barnett House, which has already published two volumes of its survey—"The Economics and Government of a Changing Area," and "Mental Health Services in Oxford City, Oxfordshire and Berkshire"—and has a third volume in publication.

It cannot be said that the reorganisation of hospital services is likely to be easy; they form a tangled skein and it will be hard to weave them into a harmonious whole. The working man, who has paid his share in rates, national insurance and contributory schemes, is in no mood to be considered the recipient of charity. Labour councils, who appreciate the power and efficiency of an organised community, are anxious to destroy the structure of patronage and nepotism which underlies the Florence Nightingale-Lady Bountiful tradition. The individualist fears the loss of the voluntary impulse, and the dead hand of the municipality and the state. The doctor suspects that he may become an unpaid public servant whose labours are exploited at the same time as his means of living are reduced. These are difficult problems and they can only be solved by experiment and by the creation of model schemes. The hope is that such regional experiments will show that it is possible to combine within an integral national framework all the vigour and variety of local patriotism and effort.

FOOTWEAR

THE failings of modern boots and shoes are now beginning to attract the attention they deserve. It is at last coming to be realised that the results in local and general ill health of such abuses as over-eating and intemperance pale into insignificance beside those of the abuse of the feet, for ill-fitting footwear is universal. The situation was regarded as serious enough by the group of industrial medical officers to justify a special meeting in London last autumn,[1] at which the feet of the industrial worker were considered by recognised experts from various sides. The medical officer to a large industrial firm there gave convincing evidence of the prevalence of painful feet among workpeople, though a physiologist, while agreeing that footwear was responsible for much distortion of the arches, was not sure that all the blame could be laid at its door. The research director of the British shoe industry opened up the idea of occupational footwear, carefully designed for its particular purpose, and he described an experimental shoe and gave proof of its effectiveness. The war has stopped these investigations.

In our present issue Dr. MARGARET EMSLIE takes us a step further back. She describes deformities found in the feet of children between

1. See *Lancet*, 1938, 1, 1480.

the ages of two and four, and apart from lesions of the soft tissues few of the disabilities of adults are not represented in her list. She shows how and where the customary shoes of infants fail to allow for normal variations of proportion, and how they may prevent the natural alteration in the shape of the foot when the change is made from standing to stepping. In our previous issue Mr. LINDSAY emphasised the appalling divergence dictated by fashion between the shape of the shoe and the foot. Why do we wear shoes at all, he asks, if it is not to prptect the feet? But the maker seems far more concerned with what attracts the eye. There is, he says, no direct coördination between the makers of the last and the fitters of the shoe, and the last-maker follows ancient custom without help or guidance from fitter, manufacturer or anatomist. Mr. LINDSAY'S chief complaints are, first, that the fore part of the shoe twists outwards, probably a survival of the idea that toes should point outwards, and second, that the sole is concave, so that the middle metatarsal bones are forced down below the inner and outer ones.

How large is the proportion of misfits is admitted in the trade press.[2] Only 80 per cent. of the populace can be fitted from stock, and then only if they accept the style the salesman offers them. Alternative fittings are not made except in one or two models of the more expensive kinds. A fifth of urban mankind must either have shoes made specially for them or wear misfits. Dr. JAMES MENNELL, who devoted most of his presidential address before the physical medicine section of the R.S.M. to footgear, cannot understand why shoe-shop windows should be labelled Ladies and Children on one side and Gents on the other. A human foot is a human foot, and it would need a micrometer to distinguish some of the bones of the foot in the two sexes, most of them being quite indistinguishable. In his view the sole of any shoe should be roughly triangular, the angle at the heel being somewhat rounded off. He exhorts men not to scoff at women's high heels, for many men would walk more comfortably on a 2½-inch heel. No-one, he says, should have a shoe fitted sitting, for the length of the foot increases half an inch when it is stood on; two sizes should be added to allow for the sliding forward of the foot and at least half a size for the sock. Mr. W. S. CREER[3] lately summed up what he thinks constitutes an ideal shoe: (1) it must grip the heel firmly; (2) there must be a bar or other tie which fits over and grips the instep; (3) the fore part must conform to the foot and must allow room for the toes to move; and (4) the heel, if the shoe is to be worn out-of-doors, or at work or play, must not be higher than 1–1½ inches. "So simple," he remarks, "but so difficult to obtain." Except for congenital abnormalities and gross disease or injury, Dr. MENNELL insists that a painless and perfect foot should be our heritage, and that we have been deprived of this heritage by lack of coöperation between manufacturer, anatomist and medical man. It is not too late to rectify this. In war-time pride and prejudice should more readily give place to sense and sensibility.

2. *Commerc. Intell. J.* Feb. 18, 1939, p. 124.
3. *Brit. med. J.* 1938, **2**, 5.

RESEARCH GOES ON

THE transference of so many people at the outbreak of war from research to its application must have raised hopes among those micro-organisms that were getting cold feet at the advances of chemotherapy, the cancer whatsit and others of their kind that they were to be allowed a respite for the duration. But in and around London at any rate their hopes seem likely to be dashed. It is true that the research department of the Royal College of Surgeons has closed down, its staff having taken to the transfusion of blood, and that elsewhere the personnel has been much reduced, but most of the essential work is to go on though its direction may be changed. None of the work under the Medical Research Council which is regarded as worthy and profitable will be interfered with, and certainly the National Institute is in full swing. The Therapeutic Trials Committee will go on as usual if manufacturers ask for the testing of their products, though the disruption of most of the general hospitals will make its task more difficult. The committee has lately had to arrange for the testing of drugs to take the place of those previously made in Germany or otherwise abroad. The laboratories of Messrs. May and Baker will continue as far as they can with their chemotherapeutic research, as well as with the investigation of processes of manufacturing foreign drugs. A considerable part of the research work being carried out at the Wellcome Physiological Research Laboratories in immunology, pharmacology, chemotherapy and hormone principles may bear directly on the production of material needed for war purposes, so that these activities are not likely to be diminished. The L.C.C. research units will go on if enough of their staff are left, and the cardiovascular unit at Lambeth, for instance, is fully occupied. The research financed by the British Empire Cancer Campaign will go on with the money in hand and the income derived from legacies. The work under the Imperial Cancer Research Fund is being done almost as comprehensively as before, although some of the medical and technical staff have gone into Government service. Those who are left are still working with hormones, viruses and carcinogenic substances and on the general pathology of cancer, as well as testing out the possible therapeutic activity of chemical substances. At Oxford, too, a peripatetic correspondent[1] leaves us in no doubt as to the stern resolve of the Nuffield workers to keep their noses to the grindstone rather than follow them into more romantic paths. And finally there is no slowing of the flow of original articles to this office. From this sample, then, it seems that there is no danger that research will be allowed to hibernate.

1. See *Lancet*, Nov. 11, 1939, p. 1051.

ANNOTATIONS

WRITING ON THE WALL

THAT walls are meant to be written on is obvious to the meanest and most infantile intelligence. Standing by the wayside, they offer a smooth expanse past which hurry or dawdle people whose attention, only partly occupied by locomotory activities, is ready to be caught for the moment by the startling phrase or the novel symbol. Hence it is natural that upon them should appear words of condemnation or exhortation which lose little by the anonymity of their authors. The announcement that Billy Smith is a donkey may indeed, among the narrow circle to which the statement appeals, carry greater weight than would the same sentiment if vocally expressed by the unknown writer. Likewise the demand to "up with" this or "down with" that politico-economic system, accompanied as it often is by symbols of apparently esoteric significance, may suggest to the passer-by some powerful and unknown forces beyond his ken, whereas, as far as an ordinary man can judge, both the condemnatory and hortatory scripts can do little more than afford a glow of personal satisfaction to the scribes. The phrase expressing the exhortation is, we believe, called a slogan, a word that originally meant a Highland battle-cry but now indicates a phrase which—like, we will imagine, "Flanagan is good for you" or "Skim milk is best"—endeavours to influence behaviour by appealing to the Bellman's principle "What I tell you three times is true." These reflections are prompted, partly by Doctor Don this week in our correspondence columns, partly by the newspaper account of a man who recently entered a billposter's office in a northern city and handed over a sum of money to be used in placarding walls and hoardings with the slogan "Insist on a doctor of like sex." Why the passer-by should thus insist, or what would happen if he did, is in the absence of reasoned statement incapable of discussion. Nor have we any means of knowing what motive prompts this exhortation. We can only make an armchair survey of the general aspect of writing on the wall and wonder where this particular example should find a place.

IMPORTANCE OF THE SERUM ALBUMIN

IN experiments on the metabolism of albumin described in his Harvey lecture by Prof. A. Ashley Weech,[1] the serum albumin in dogs fed on a low protein diet was found to decline rapidly at first but slower as time went on. If the dog was then returned to a normal diet regeneration took place at a constant rate till the initial level was reached. But if the dog was kept on the low diet for many months the rate of albumin regeneration soon slowed down and it took a very long time to reach the original level. A similar state of affairs is found in man in nutritional œdema and nephrosis. This is explained by supposing that the organ involved in the regenerative process—namely, the liver—is damaged in these conditions. Experiments have revealed that albumin is slightly more permeable through the capillary wall than globulin. It has been known for some time that, far from there being a hydræmic plethora in nephrosis, the plasma volume is actually reduced. In animals there has now been shown to be a parallelism between a fall in plasma protein and a fall in blood volume. In dogs kept on a low protein diet there is a fall in cell volume and plasma volume, but after 20–30 days the plasma volume becomes stable while the red-cell volume continues to fall. The failure of the plasma volume to go on falling is explained by assuming that an opposing force is liberated by the diminishing red-cell volume to prevent an excessively low blood volume.

In treating nutritional œdema in dogs Weech produced diuresis by injecting intravenously a concentrated solution of dog serum. The immediate effect of this on the blood was a great increase in the plasma volume and a slight decrease in the serum-protein concentration due to dilution of the serum globulin. Transfusion with washed red cells also produced a diuresis, without, of course, contributing to the serum-protein concentration. Diuresis thus produced is therefore probably due to improved circulation consequent on increased blood volume. Various diets were tested to determine their efficiency in regenerating serum protein in dogs. Beef serum was found to be best, followed by egg-white, beef muscle, beef liver and casein. These experiments clearly have a considerable bearing on similar clinical conditions in man.

1. Weech, A. A., Harvey Lectures (New York) 1938–39. London: Baillière, Tindall and Cox. 1939. Pp. 57.

PSYCHOGENESIS OF SCHIZOPHRENIA

THERE has been general agreement that the neuroses may have a psychological causation, but the view that the psychoses may arise in the same way has found little support, at any rate in this country. Prof. C. G. Jung, who twenty years ago first put forward the results of his work in this field, has again clearly defined the position.[1] Following Bleuler, Jung and others of the Zürich school have agreed that the secondary symptoms of schizophrenia have a psychological causation similar to that found in the neuroses. The primary symptom, however, is more difficult to explain, and for this Bleuler himself has been in favour of an organic origin. This primary symptom is, in Bleuler's opinion, the disturbance of association processes, a sort of disintegration and shattering of the personality that is quite unlike anything seen in the neuroses inasmuch as it tends to be irreversible, the fragments losing the "seal of the personality," and the dissociation being "no longer fluid and changeable, but like a mirror broken in pieces." Jung suggests that the primary symptom is similar to the concept of *abaissement du niveau mental* used by Pierre Janet to explain the symptomatology of hysteria. In the case of schizophrenia the abaissement has reached a level unheard of in neurosis, and thereby the foundations of the personality are injured. In this case normal associations are interfered with, incomplete realisation and therefore inadequate emotional reactions are caused and the threshold of consciousness is lowered to a degree in which normally inhibited unconscious material can intrude upon consciousness. An abaissement can be produced by many causes—by fatigue, normal sleep, intoxication, fever, anæmia, shock, intense affects and organic nervous disease, as well as by constitutional and hereditary factors. Often a neurosis results in which the unity of the personality remains intact, but once the patient allows himself to be swayed by the intrusion of strange contents from the unconscious—"a case that does not fight, that even identifies himself with the morbid elements"—he exposes himself to the suspicion of schizophrenia. Here the abaissement has reached the stage where the ego has lost all power of resistance against the onslaught of a more powerful unconscious. The presence of bizarre, strange mental content is to Jung no evidence of poisoned brain cells, for he has found just these phenomena in the dreams of normal

1. Jung, C. G., *J. ment. Sci.* September, 1939.

people and neurotics, and in the works of modern artists and poets, and suggestive parallels in mythology and the symbolism of primitive races. The fact that schizophrenia disturbs the basic qualities of the personality accounts for the presence in consciousness of this archaic material.

The difference between neurosis and psychosis is therefore to Jung only a matter of degree, a question of whether the individual can or cannot stand up to a certain panic, or the chronic strain of a psyche at war with itself. In certain cases there is evidence, in his opinion, to suggest that it is not so much a primary weakness of the conscious which is brought out by the abaissement as the primary strength of the unconscious. In certain people he would postulate an arrested development resulting in a persistence of an infantile, primitive mentality, full of archaic material. Here an extra effort of adaptation results in consciousness being overwhelmed by this latent material. Although Jung can show that the content of schizophrenic thought-disorder is not essentially different from that found in neurosis, he still finds many objections to the theory of pure psychogenesis of this disease. The far-reaching consequences of the abaissement, the incurability, ultimate affective dementia and bad prognosis are serious objections. He cannot conceive how psychical events can cause an abaissement which destroys the unity of the personality. In his own practice, however, he claims some success from psychotherapy for the mild chronic schizophrenic. He is enthusiastic but certainly not over-optimistic. His conclusion, which is likely to receive increasing support, is that it is wellnigh impossible to prove that schizophrenia has either an exclusively organic or exclusively psychological causation.

CHEMOTHERAPY OF LYMPHOGRANULOMA INGUINALE

BEFORE the introduction of the sulphanilamide group of drugs the treatment of lymphopathia venerea in its different manifestations, such as lymphogranuloma inguinale, anorectal stenosis, and esthiomène, was not at all promising. Pardo-Castello and his colleagues,[1] reviewing 285 cases in Cuba, showed that the results with various active remedies differed little from those of merely expectant treatment, although it is true that Lana Martines [2] and others have reported favourably on the use of Frei's antigen. Foreign pioneers in the sulphanilamide therapy of lymphogranuloma inguinale were enumerated by MacCallum and Findlay,[3] who showed that sulphanilamide could protect mice to some degree against an active strain of the responsible virus. The first success in England in the treatment of lymphogranuloma inguinale with sulphanilamide appears to be that reported by Laird;[4] G. R. Hamilton [5] in 1938 secured 13 cures in 15 cases, and Earle [6] treated 2 cases with M. & B. 693 in British West Indies. Midana,[7] of Turin, next recorded 21 cases of lymphogranuloma inguinale treated with sulphanilamide (Streptosil) 2·4 g. (eight tablets of 0·3 g. each) being given by mouth and 10 c.cm. of a 2 per cent. solution by intravenous injection daily for not more than sixteen days. With a past experience of more than 250 other cases of lymphopathia venerea treated by other methods, he declared that the results were brilliant and surpassed all expectations. Glandular lesions at all stages were amenable, and only 1 patient needed a second course of treatment. In particular, 1 case of eighteen months' duration, which had proved resistant to various treatments, such as iodine, antimony, and radiotherapy, was rapidly cured with sulphanilamide. The same treatment applied to 7 patients with the anorectal syndrome, however, was not so satisfactory; in fact no definite conclusions could be drawn. In 4 cases of ulcerative esthiomène, on the other hand, the results are described as encouraging.

On another page in this issue Earle publishes 12 illustrative cases (10 of lymphogranuloma and 2 of rectal stenosis) selected from a further 23 successfully treated with M. & B. 693 administered in five-day courses of five to six 0·5 g. tablets daily. The best results were obtained when treatment was started early —i.e., in the stage of adenitis. Cure was slower when fistulæ had formed.

Sodium sulphanilate has also been successfully used in lymphogranuloma inguinale. Hebb et al.[8] cured or considerably improved 14 advanced cases by a prolonged treatment (six to thirty-five weeks) with either sodium sulphanilylsulphanilate or sodium sulphanilate. There appeared to be no significant difference between these two drugs, except that sodium sulphanilate was less toxic. This is the first recorded use of sodium sulphanilate in place of sulphanilamide. This substance is as effective as sulphanilamide in vitro against pneumococci, but not so effective against streptococci. In vivo, on the other hand, it is without effect against either organism. Whereas sulphanilamide diffuses quickly into all parts of the body after administration by mouth, sodium sulphanilate does not, and Schulemann has found that it does not reach the cerebrospinal fluid. Sodium sulphanilate is much less toxic and is cheaper than sulphanilamide; therefore, if the results of Hebb et al. are confirmed, it might be tried in other infections—e.g., gonorrhœa. Sodium sulphanilate may be as good as sulphanilamide in certain infections if it can reach the infecting agent. Clearly it would be useless in meningitis and in encephalitis.

VITAL STATISTICS FROM WEST AFRICA

ACCORDING to a return published by the Crown Agents for the Colonies [9] the non-native officials employed in West Africa—that is, in Gambia, Sierra Leone, Gold Coast and Nigeria—number about 3000. In the quinquennium 1934–38 their average annual death-rate was approximately 7 per 1000, while a further 15 per 1000 were invalided. The corresponding rates for 1938 were slightly higher—namely, 8·9 and 19·0—but fluctuations of this order from year to year are only to be expected in so small a population. A graph showing the annual death-rates in the last twenty years suggests that there has been a distinct improvement at ages under 50. The invaliding rate similarly graphed also shows a consistent fall for the youngest age-group, 15–29 years, but at ages over 30 the improvement ceased in 1931 or 1932 and an increase has since been apparent. The report offers no explanation of this tendency, which seems well deserving of study. In the year under review, 1938, only 6 of the 29 deaths recorded were due to tropical diseases, 3 being from yellow fever and 3 from blackwater fever, all of which occurred in Nigeria. The largest contributors to the 62 cases of invaliding were psychasthenia (16 cases) and

1. Pardo-Castello, Ferrer, Ibarra, and Tiant, *Vida nueva*, 1938, 42, 465, cited in *Lancet*, 1939, 1, 246.
2. Lana Martines, F., *Sem. med. esp.* Jan. 28, 1939, p. 113.
3. MacCallum, F. O., and Findlay, G. M., *Lancet*, 1938, 2, 136.
4. Laird, S. M., *Brit. med. J.* 1938, 2, 1043.
5. Quoted by G. A. H. Buttle; see *Lancet*, 1939, 1, 1441.
6. Earle, K. V., *Ibid*, p. 985.
7. Midana, A., *Minerva med., Roma*, July 14, 1939, p. 40.
8. Hebb, A., Sullivan, S. G., and Felton, L. D., *U.S. publ. Hlth Rep.* 1938, 54, 1750.
9. West Africa. Vital Statistics of Non-native Officials. Returns for 1938. Published by the Crown Agents for the Colonies, 4, Millbank, London, S.W.1. 1939. Pp. 7. 6d.

gastric and duodenal ulcer (8 cases); judging from recent work on the nervous factor in ulceration these may, perhaps, represent dissimilar reactions to similar causes.

STATUS LYMPHATICUS REDIVIVUS

BEFORE the section of anæsthetics of the Royal Society of Medicine on Dec. 1 Dr. John Taylor [1] reviewed the history of lymphatism or status lymphaticus from its birth in the seventeenth century, and gave an account of the anatomical facts and the clinical phenomena which justify its acceptance as an entity. He showed how misleading had been the conception which regarded enlargement of the thymus as the chief sign of the condition and pressure by the thymus as the chief cause of the symptoms. The essential feature, without which a pathologist would not recognise lymphatism, is generalised excess of lymphoid tissue. Dr. Taylor gave brief details of fourteen patients in whom he had found this excess post mortem. All these patients had died without showing either in life or after death any lesion which could be held responsible for their demise, except the lymphatism. Several had died during or just after taking ether as an anæsthetic, never for any operation involving serious shock or excessive hæmorrhage. He also expounded the modern view which associates lymphatism with deficiency of the adrenal cortex as well as the one which maintains that there is no such thing as status lymphaticus. In contrast with this latter Dr. Taylor read the recorded opinions of three well-known living pathologists all of whom supported its existence. Experienced anæsthetists gave instances which had convinced them of its reality. But there were others, younger and therefore more sceptical, who seemed to think that lymphatism as the cause of death at operation was merely a synonym for inefficient anæsthetic practice.

HEPARIN IN SEPTIC ENDOCARDITIS

THE physician who is faced with a case of septic endocarditis tends—in the words of Cozens Bailey—to "pick up his ball and go on to the next hole." This disease has shown such resistance to therapeutic endeavour that interest is certain to be roused by any new form of treatment. Two papers from the United States record the use of heparin in this condition, supplemented in one series with sulphapyridine. The hypothetical basis for its use is that the streptococcus lies immured in the cardiac vegetation sheltered by the constantly growing platelet thrombus from the depredations of leucocytes and antibacterial substances. If the progressive accumulation of platelets which forms the vegetation could be prevented leucocytes, natural immune bodies and chemotherapeutic agents might be able to reach the organisms in effective concentration. Best [2] has shown that heparin will prevent the formation of platelet thrombi in dogs so that it would probably stop the increase in size of the vegetations in the human disease, a contention for which Friedmann, Hamburger and Katz [3] offer some corroboration. Kelson and White [4] have combined heparin and sulphapyridine in seven cases of streptococcus viridans endocarditis; two cases had reactions from impure heparin and treatment had to be abandoned, and two died from the disease within a few days, but the remaining three were free from all symptoms and had negative blood-cultures 19, 18 and 4 weeks respectively after discontinuing treatment. Heparin in a strength of 2000 units per 100 c.cm. of normal saline was administered by continuous intravenous drip at a rate of 15–20 drops per min. for 14 days; sulphapyridine (4–6 g. daily) being given for a week before, during, and for a week after the infusion of heparin. These results are reported in a preliminary communication and the authors are careful to restrain their enthusiasm, but it is clear that no therapeutic measures have been followed in the past by such a high proportion of remissions of such long duration; Kelson and White would certainly agree that enough time has not yet elapsed to claim that they are cures.

1. Dr. Taylor's paper will be published in full in an early number of the society's *Proceedings*.
2. Murray, D. W. G., Jaques, L. B., Perrett, T. S., and Best, C. H., *Surgery*, 1937, **2**, 163.
3. Friedman, M., Hamburger, W. W., and Katz, L. N., *J. Amer. med. Ass.*, Nov. 4, 1939, p. 1702.
4. Kelson, S. R., and White, P. D., *Ibid*, p. 1700.

OSTEO-ARTHRITIS

Heberden first described his nodes in the 18th century, but it is still uncertain whether after all these curious bone swellings on the last joints of the fingers may not be a form of gout. Dr. Ernest Fletcher's Heberden lecture on osteo-arthritis [1] fitly commemorates one of the great forerunners in the differentiation of diseases of the joints. It is a thoughtful and painstaking study of 340 cases, which in his opinion represent the incidence of the various types of rheumatism in a poor East-end neighbourhood. In this total the "infective"—i.e., the rheumatoid—cases number 67, with an incidence in three women to one man, and an average age of onset of forty-one. An even greater preponderance of women and a younger onset have been noted amongst factory girls in the north-west and in Scotland. Fletcher has 18 cases in which infective arthritis led to osteo-arthritis and 3 in which this sequence was reversed. "General" osteo-arthritis accounts for 103 cases. Other forms were: of the spine 34, associated with gout 15, traumatic 10, occupational 7, and of the hip-joints 15 cases. Statistics compiled from any large number of cases are of course fundamentally affected by the classification adopted, and Dr. Fletcher might have been wise to follow the main divisions proposed by the Ministry of Health in 1923 or those of the International League against Rheumatism or the Royal College of Physicians. In a miscellaneous outpatient practice the proportion of osteo-arthritic cases (nearly two-thirds of the total number of rheumatic cases) seems unusual. In looking for the cause of a disease it is always important to note the age of onset. Apart from the earlier onset of the more acute forms of rheumatoid disease the lecturer's figures will be generally accepted, that neuritis and fibrositis as well as osteo-arthritis belong to middle and later life. He regards the type of arthritis, often with obesity, seen at the menopause as distinct from osteo-arthritis, the probability being that rheumatoid and menopausal and osteo-arthritis are all distinct diseases. He admits, like others, that the X-ray findings may be deceptive, as they often show advanced osteo-arthritic changes, in the spine, for example, without any clinical signs of disease. Thus, osteo-arthritis cannot be regarded simply as a disease of wear and tear; some other factor, infective, metabolic, endocrine, traumatic, must intervene.

Stamm's view, [2] derived from orthopædic observations, is that osteo-arthritis is emphatically a mechanical arthritis, the grinding of the central area of the articulation being connected with failure of lubrication. An important factor is also the condition of the blood-supply—in one phase of the disease excessive (hyperæmia), in another defective or entirely wanting. The tissues of a joint, like others, undergo atrophy under constant pressure, but often

1. *Brit. J. Rheum.* October, 1939.
2. Stamm, T. T., *Lancet*, Sept. 30, 1939, p. 754.

show overgrowth and hypertrophy under intermittent pressure. Stamm concludes that osteo-arthritis is rather a process than a disease, associated, it may be, with previous arthritis or metabolic changes, as in gout, or with malnutrition in old age.

PURPOSE IN NATURE

In republishing his lectures in book form (see p. 1268) Professor Wood Jones has us in debt for showing us again how much more than an anatomist an anatomist can be. He is not content with the mechanistic biology of 30 or 40 years ago, to which so many biologists still adhere. In too many ways the combination of physics, chemistry and Darwinism seems inadequate to explain the phenomena of what we recognise as life. In particular it takes no account of the idea of purpose, without which many happenings in physiology and in ontogeny simply do not make sense. Admittedly no-one has a convincing non-mechanistic theory with which to satisfy the doubters, but Wood Jones prefers to wait with Langdon-Davis for a yet unborn Einstein of biology, rather than to acquiesce in the view that biology is a branch of physical science and nothing remains but to work out its details. And in one delightful passage, with his tongue in his cheek and his eye on Lawrence Henderson, he asks why it comes about that inorganic conditions on the earth are so favourable to the development of life. The temperature, the atmosphere, the wide distribution of carbon and of water with its most peculiar physical properties, and sundry other features of the earth are all unique, or nearly unique, in the universe; and the odds against their chance occurrence in conjunction seem overwhelming. Are we to detect an element of purpose in the ordering of the inorganic world, adapting it to the needs of life? At this point the professor takes refuge with the poets, willing to believe with Francis Thompson that, somehow or other, there is a mysterious nexus between the flower and the star.

DRUG TRAFFIC IN WAR-TIME

The Central Opium Board constituted by the Geneva Convention of 1925 has been in communication with the states, parties and non-parties, to that convention urging that the activities of the board must be carried on. Drug addiction became a serious menace during the last war, and it is feared that unless the traffic in narcotics continues under international control similar evils may arise this time. By a world-wide mechanism, with an international centre at Geneva, effective supervision of the traffic in dangerous drugs has been largely secured and it is claimed that the contractual basis of the work under the Permanent Central Opium Board remains solid. Accordingly all the states have been requested to remit to the board the statistics and estimates which for the last ten years have been furnished and from which the legitimate requirements of the several scheduled narcotics by each country are determined. The governments of France, Switzerland and the United States have promptly indicated their agreement. The cordial response of the last named, though not a member of the League of Nations, is especially welcome. It will indeed be remembered that it was the early interest of the United States in the opium traffic that led to their coöperation with the League's organisation while consistently refusing membership thereof. The secretary of state in his reply observes that "the government of the United States has regularly and thoroughly coöperated with the Permanent Central Opium Board, and its associated organ the Drug Supervisory Body since their establishment, and expects to do so in future, as in the past, as long as their independence is maintained." It is upon the operations of these two bodies that the entire fabric of international drug control principally rests, and that it is of the highest importance to the whole world that the Central Opium Board and the supervisory body should continue to function, adequately, effectively and without interruption, notwithstanding the disturbance of war.

CEREALS AND RICKETS

It is now nearly twenty years ago that Mellanby showed[1] that cereals may produce rickets in young animals; increasing the cereals in diets deficient in the antirachitic vitamin intensified the symptoms of rickets. The explanation then suggested that cereals speeded up the growth of the animals without at the same time supplying sufficient calcium and phosphorus for the bones has since been found inadequate, although possessing some validity. On the whole, the cereals with the largest content of Ca and P, such as oatmeal, maize and wheat-germ, cause the lowest retention of these elements in the bones and teeth. A large part of the organic phosphorus of cereals, as of seeds in general, is in the form of phytic (inositol-hexaphosphoric) acid in combination with calcium and magnesium. Phytin itself is not absorbed in the alimentary canal, its utilisation being due to breakdown into inositol and phosphoric acid from bacterial action in the intestine. Hot dilute acids have similar effect, a significant fact in view of the reduced rachitic action of cereals which have been boiled with acid. Harrison and Mellanby have tried[2] the effect of feeding phytic acid and its crystalline alkaline salt to dogs. Both were highly rachitogenic when added to a borderline diet, the action being roughly comparable to that of oatmeal of similar phytin content. The rachitogenic action of sodium phytate, as of cereals, is antagonised by adding extra calcium to the diet. Commercial phytin itself is slightly antirachitic. The amount of phytic acid in oatmeal is about twice that needed to precipitate the calcium in the cereal. On the other hand, Palmer and Mottram[3] trace the tendency of cereals to produce rickets to their low calcium and high phosphorus content. This tendency can, they find, be counteracted entirely by adding calcium lactate to the diet so as to make the Ca : P ratio 1 : 0·5, and they conclude that the rachitogenic action of cereals does not reside in the phytin they contain, for the reason that the addition of phytin actually reduces the rickets. The first of these conclusions is consistent with the facts put forth by Harrison and Mellanby; the other may be explained by the fact that the commercial brand of phytin used by both groups of workers was found by Harrison and Mellanby to have a Ca : P ratio of 1 : 1·8 while the phytin prepared from oatmeal gave a ratio of 1 : 3, with a Ca : Mg ratio of 1 : 1·5 against 1 : 0·125 in the commercial preparation. Harrison and Mellanby draw from their work the practical conclusion that the rickets-producing action of cereals is to be overcome, not by increasing the P of the diet (as would hold if it were true that the cereal action is due to unavailable P), but by increasing the Ca intake—e.g., by drinking more milk. It seems likely, in fact, that the rachitogenic action of cereals only comes into effect in diets on or below the borderline of necessary Ca and vitamin D. It is unfortunate that, for economic reasons, these borderline diets so often contain a disproportionately high amount of cereal.

1. Mellanby, E., *Lancet*, 1920, **1**, 1290.
2. Harrison, D. C., and Mellanby, *Biochem. J.* 1939, **33**, 1660.
3. Palmer, N., and Mottram, J. C., *Ibid*, p. 512.

SPECIAL ARTICLES

NEUROSES IN WAR-TIME

A YEAR ago Dr. Crichton-Miller, at a meeting of the Royal Society of Medicine, said that in the last war the term shell-shock did much harm by implying a single ætiology, and he expressed the hope that in some future war the medical profession would be so sure of their ground as to apply to each war neurotic specific questions concerning the possible synergy of organic and psychic factors, of resultant and purposive mechanisms. The conference convened by the Minister of Pensions in July, under the chairmanship of Lord Horder, to advise the Government as to general principles for dealing with these cases has now reported,[1] and the report begins by expanding what Dr. Crichton-Miller had in mind.

During the last war, says the report, the occurrence of large numbers of neuroses engendered by fear, shock, exhaustion, physical and mental strain or lack of sleep, and the rapidly increasing incidence of these from 1916 onwards, caught both the services and the medical profession unprepared with any organisation or agreed method of treatment to deal with them. The result was an accumulation of a great number of this type of "casualty" and a consequent lowering of the general morale. These neuroses were popularly called "shell shock," a term which came into use in 1914, when it was believed that the great bulk of nervous disorders noted in the field of war had their origin in the physical effects of concussion by high explosives or of poisoning by gases. At that time this theory was widely prevalent and was even promulgated by neuro-psychiatrists of experience. It soon became obvious that this view could not be justified since precisely similar disabilities occurred not only amongst men who had not been subjected to any such exceptional exposure but also amongst those who had not been overseas. Moreover, the nervous disorders arising during the war differed in no material way from those well known in civil life. Again, many men who were blown up or buried to the same extent were able to return to duty without admission to hospital and without apparently suffering any durable effects. However, the term shell-shock became a catchword among the troops and was welcomed by the man suffering from nervous symptoms as he did not realise, or could not admit to himself, or to others, that he might be suffering from the effects of fright or terror. Such was the appeal of the word that this became a most desirable complaint from which to suffer.

CLASSIFICATION

Most of these neuroses took the form of either an anxiety state or hysteria. Anxiety states reveal a common characteristic—the constant presence of fear or anxiety accompanied to a greater or lesser extent by vasomotor and visceral concomitants. In mild cases the anxiety is simply a prolongation and exaggeration of the natural anxiety experienced by everyone when exposed to war conditions. The source of this anxiety is commonly the fear of being found afraid or anxiety may be aroused by the fear of loss of business and other financial and domestic worries. In more severe cases the condition is induced by morbid anxiety in which there is no apparent logical connexion between war experiences and the symptoms of anxiety. Here the anxiety is out of all proportion to the apparent exciting cause or may have no obvious cause at all. In most of such cases it is experienced as a diffuse state of emotional tension undirected to any specific object or situation and causes a state of fearful expectation. In a few predisposed people the anxiety reaction is characterised by the development of phobias, or the anxiety may be transferred from its original object to some other situation which appears to the patient to afford reasonable grounds for apprehension, or to preoccupations of a hypochondriacal type. It may be accompanied at the outset by some degree of depression, or depression may be a secondary development.

Hysteria, more than any other form of mental reaction, provides the clearest example of the onset of neurosis due to failure of adaptation as the result of conflict between individual needs and social requirements. Suggestion is the most important factor as a cause for the symptoms. Physical manifestations of severe emotional disturbance such as mutism and tremors, or the effects of a minor physical injury producing some temporary loss of power in the limbs, are readily perpetuated as hysterical symptoms by means of suggestion in men who have been subjected to physical or mental stress. Suggestions by medical officers or other attendants, in the course of examination and treatment, may have serious results and are often responsible for the onset of such symptoms. Underlying the process of suggestion is a conflict between the instinct of self-preservation on the one hand and ideas of duty and self-respect on the other. The development of the symptom satisfies the patient's ethical requirements, provides an escape from duty on ground of physical incapacity and at the same time gives effect to his individual needs by removing him from an intolerable situation. In a sense hysteria is thus an unwitting purposive or defence reaction, the patient being unaware of any such motivation. Not only is this unconscious motive responsible for the onset of the neurosis but it helps to perpetuate it until the conflict is solved by other means. It is aggravated by popular misconceptions as to the nature of the neurosis, by the sympathy of friends, and whenever it achieves its aim—invaliding from the battle-field or the service—an increase in the incidence of these neuroses is encouraged. Further, if it should lead to any economic gain, treatment becomes extremely difficult and often useless.

The committee appointed by the Army Council in 1920, after condemning the term shell-shock as a gross and costly misnomer, divided the cases into three main classes:—

(1) Genuine concussion without visible wound as a result of shell explosions; this includes 5–10 per cent. of the cases.

(2) Emotional shock, either acute in men with a neuropathic predisposition or developing slowly as a result of prolonged strain and terrifying experience, the final breakdown being sometimes brought about by some relatively trivial cause; this includes 80 per cent. of cases.

(3) Nervous and mental exhaustion, the result of prolonged strain and hardship.

They agreed that in the great majority of chronic cases there already existed a congenital or acquired predisposition to excessive and therefore pathological reaction but that the neuroses of war may manifest themselves even in those of sound nervous constitution provided stress be sufficiently severe and prolonged. They recommended that no case of psychoneurosis

1. The report is being issued to members of the Government medical services and to the medical press.

or mental breakdown, even when attributed to shell explosion, should be classified as a battle casualty, and set out the following factors as tending to increase the incidence and severity of mental and nervous disorders in time of war.

(*a*) All those factors by which a soldier, or even a potential soldier, is encouraged to believe that weakening of mental control provides an honourable avenue of escape from military service.

(*b*) The ignorance of the general community, both civil and military, together with the lack of interest evinced by the medical profession before the war regarding the origin, nature and significance of mental, and especially emotional, disorders.

(*c*) Those preventable conditions which undermine a man's mental and physical health and lower his power of resistance—e.g., bad sanitation, bad accommodation, abuse of alcohol and drugs or venereal disease.

(*d*) The use of the term shell-shock, and such terms as "N.Y.D.N.," "D.A.H." which become catchwords.

DIAGNOSIS OF CONCUSSION AND EMOTIONAL SHOCK

The conference's report points out the importance of differentiating concussion from acute emotional shock not only because inappropriate treatment of the latter in the early stages retards recovery but also because incapacity certificates for physical injuries under the Personal Injuries (Emergency Provisions) Act apply to cases of concussion. The diagnosis of concussion should be made only when the patient has suffered physical injury by the direct explosion of a shell, by being knocked over by it, or by being buried under debris of a building or shelter. The concussed patient becomes immediately unconscious or is at least severely dazed or stunned. This loss of consciousness may last for a few minutes to several days. When the immediate effect passes off there is complete amnesia for a period immediately before and after the injury, and it is not possible to restore this memory by any therapeutic measures. Patients suffering from emotional shock also often state that they became unconscious after the incident to which they attribute their symptoms, but by careful questioning they can usually recall most of their experiences.

Evidences of direct physical injury are often associated with concussion, such as rupture of the tympanic membranes, epistaxis, contusions and, more rarely, signs of organic injury of the nervous system. The early symptoms can rarely be mistaken, but those of later periods are often misinterpreted. The most characteristic of these are headache, which gets worse as the day goes on, pain and stiffness of the neck, vertigo, mental and physical inertia with drowsiness and heavy sleep. The pupils may be irregular and their reaction to light sluggish. In the early stages the tendon jerks are usually depressed, later becoming brisk or exaggerated. There may be fine tremors of the limbs but the coarse tremulousness of the limbs and head which is so common in the neuroses does not develop in concussion. Emotional instability is absent.

Acute emotional shock may develop independently of any close exposure to the place of explosion. The fact of being subjected to bombardment or air-raid or seeing horrifying sights may suffice to precipitate it. An avalanche of emotion seems to overwhelm the patient's consciousness, releasing primitive reactions. The clinical picture in the more severe cases may be one of terror, stark panic and confusion or one of physical and mental collapse. In the former type the tendency is to hyperactivity—aimless running, incoordination, incoherence, screaming and disorientation. In the latter type the reverse condition of stupor may occur. In this state it is difficult or impossible to elicit information. The patient may sit, or lie, about in an apathetic state and may be shaken with violent tremors. In such cases there may be a cataleptic state for a considerable time. In milder cases, stupor is less profound, and the patients may carry out simple actions in a hesitating way. They look dazed or confused, are easily startled and take little notice of what is going on around them. The stupor may last from a few hours to several days and then pass off suddenly or gradually.

TREATMENT

The immediate treatment of patients exhibiting nervous symptoms during and after air-raids is extremely important, for if they are neglected the morale of the population suffers seriously.

According to the Emergency Medical Service memorandum issued by the Ministry of Health [2] the first essential in the handling of these patients when they arrive at an aid post is to convince them that their symptoms indicate no serious injury and that they will soon disappear. This necessitates reassurance and the re-establishment of self-confidence combined with such methods as may lead to even temporary disappearance or abatement of the symptoms. In patients who are simply frightened, and in emotional cases, reassurance combined with an appeal to personal and patriotic pride and a large dose of bromide will usually be sufficient. The patients should then be sent to their homes. When confusion, excitement, loss of memory or disorientation are the chief symptoms, rest, warmth, hot drinks with plenty of sugar or a dose of bromide (gr. 20–30) or phenobarbitone (gr. 1) will be necessary. When patients are restless or excited, a hypodermic injection of morphia (gr. ¼) or preferably an intramuscular injection of sodium phenobarbitone (gr. 1½) combined with hyoscine hydrobromide (gr. 1/100) may be required. When hysterical symptoms predominate an attempt should be made at once to influence or remove them by suggestion, for instance by showing the patient that a powerless limb is not paralysed or anæsthetic, or by making a speechless patient phonate by coughing and then utter a single sound as "Ah." Hysterical tremor can be usually arrested by making the patient relax his muscles.

The severity and duration of the disorder and its extension to other individuals depends in many cases on the treatment which it receives at the onset. If patients in whom such a step is not absolutely necessary are transferred to hospital, the conditions from which they are suffering may be accentuated or prolonged, so that every effort must be made after the preliminary treatment to send such patients back to their own homes, under escort if necessary.

RADIOTHERAPY AND UTERINE CANCER

THE third volume of the annual report of the Health Organisation of the League of Nations on the results of radiotherapy in cancer of the uterine cervix shows that progress is being made. The report now includes 16 statements from clinics in Sweden, the United States, France, Belgium, Holland, Denmark and Great Britain, and the results, which cover over ten years, show a steady improvement in the survival figures. Dr. J. Heyman, the editor, points out that it is still difficult to ensure that statistics are comparable and that even the simplified basis which has been adopted allows some variation in the method of

1. Memorandum for the Guidance of Medical Officers and other Personnel at First-aid Posts. H.M. Stationery Office. 1939. Pp. 14. 3d.

assessing results. It is, for instance, necessary when comparing the results of treatment from various clinics to realise that in some between 30 and 40 per cent. of the patients examined with a view to treatment were not treated in that clinic, while in others where almost all the cases examined were accepted for treatment the high proportion of cases in stages 1 and 2 suggest that they were fortunate in the type of case presenting.

The most important single statement is that of Dr. Heyman from Radiumhemmet, Stockholm, because all the cases of carcinoma of the uterine cervix diagnosed in the district of Sweden served by the hospital are actually referred there. The absolute cure-rate there indicates the possibility of cure for this disease in a whole population. With this in mind, the rate quoted —26·8 per cent.—is very encouraging.

A summary of all the reports shows that out of 7958 patients submitted to radiological treatment 27·6 per cent. lived for over five years. The relative cure-rate for each of the four stages is:—

Stage	1	..	871 patients	..	57·2 per cent.
,,	2	..	2305 ,,	..	37·6 ,,
,,	3	..	3420 ,,	..	22·0 ,,
,,	4	..	1360 ,,	..	5·5 ,,

These figures show conclusively that radium therapy not only cures a satisfactory proportion of patients in the early stages where operation might have given equally good results, but also cures 22 per cent. of patients in stage 3 where operation would have been impossible. These facts effectively dispose of recent suggestions that radium as a therapeutic agent had proved so disappointing that it should be discarded. For cancer of the cervix radium remains the treatment of choice.

SCOTLAND

(FROM OUR OWN CORRESPONDENT)

LORD NUFFIELD'S GIFT

SCOTTISH medical circles are delighted by Lord Nuffield's inauguration of a central hospital fund. It is understood that Scottish hospitals will benefit from this fund, but it is not yet known whether Scotland will be considered one region or whether there will be four regions centred upon the four major cities.

STORAGE OF RADIUM

At the outbreak of war Edinburgh Royal Infirmary had about four grammes of radium in constant use, amounting in value to about £28,000. It was recognised that the dispersal of this radium by explosion might be dangerous to life as well as a colossal waste of money. Within the grounds of the infirmary an old shaft was discovered which led into the Crawley tunnel, 60 feet below the ground. This tunnel runs from the Meadows to the region of the Castle and carries a water main. The old shaft has now been utilised as a store for the radium. By means of a chain and pulley the amounts needed for day-to-day hospital use can readily be brought up, but at no time is a sufficient amount above ground to cause serious danger should it be disseminated during an air-raid.

PEEL HOUSE

Lord Craigmyle has handed over to the Government this old mansion house near Galashiels, and it has now been opened as the first base hospital in Scotland under the emergency scheme. The house is impressive in the Scottish baronial style, and from some of the windows it is possible to see the Sheriff's Knowe, where Walter Scott had a turf seat and wrote two cantos of "Marmion." All the wards are within sight of the Border hills and almost within earshot of the Tweed. The rooms have been converted into wards with accommodation for 40 beds, and fully equipped operating theatres, but later the mansion house itself will become the administrative offices, and 10 huts now being built in the gardens will be the hospital wards. These radiate from a large central block and each hut will accommodate 40 patients. Other huts are being built as living and sleeping quarters for 160 nurses, while the kitchens will be in another hut. Some time ago the Edinburgh corporation took over the mansion as a convalescent home for small children, but they gave up possession on the understanding that it would be available for all classes of acute illness, military or civilian.

ON MEDICAL STUDIES

In an address to the Bute medical society Air Vice-Marshal Sir David Munro, rector of St. Andrews University, said that unless the student is well grounded in the fundamental sciences there is little chance of his ever advancing knowledge in the medical field. He stressed the importance of arts, and maintained that an understanding of the human mind is the greatest asset of the successful doctor. He believed that students are likely to be taught the fundamental sciences better in a university than in a hospital medical school because the university tended to attract the best men, and in the hospital medical school there is a tendency to regard preclinical subjects as so much drudgery, merely subjects in which examinations have to be passed. It seemed to him that medicine was going to pass more and more into the hands of the state. Those who entered the state services were given a career free from the commercialisation of the private practice, and the results would be advantageous so long as the services did not become over-officialised. But it would be a bad day when the general practitioner lost his place, for he was the expert in human relations.

SWEDEN

(FROM AN OCCASIONAL CORRESPONDENT)

NUTRITIONAL DISEASES IN MENTAL HOSPITALS

ASYLUM physicians in Sweden have suddenly become nutrition-conscious. It has of course long been known that gastro-intestinal disturbances are common in asylum inmates, but it is a far cry from this observation to the suspicion that a goodly percentage of mental disease is the more or less direct outcome of malnutrition, the correction of which restores the patient to health. This change of outlook has largely been effected by the discovery that pellagra and sub-pellagra can often be found in mental hospitals, and that antipellagra treatment, if instituted before extensive skin changes have set in, is remarkably successful in restoring the patient to sanity. At the Beckomberga mental hospital, Dr. Erland Mindus started a large-scale experiment in the autumn of 1937. He sorted out some 60 women patients in whom depression with or without paranoia was associated with low gastric acidity, lassitude, anorexia, loss of weight, anæmia and sleeplessness, fitting into the picture of "neurasthenia gastrogenica." The patients were divided into two groups. Those in the first group were given a stomach extract with hydrochloric acid, vitamins B_1 and B_2, and extra rations of meat

and eggs. The second group, which served as a control, received no special diet or treatment. The first group fared strikingly better than the second.

IRRADIATION OF MINERS

Here in the north the miner enjoys little natural sunlight in the winter months. From the middle of September till the middle of March he sees the sun only on Sundays and for a brief moment at midday on work-days. The miners employed by the Boliden Company have been provided with a solarium, which according to its sponsor Dr. Johan Pontén is the only one of its kind in Sweden if not in the whole of Scandinavia. He started it in December, 1937, when the miners were encouraged to take a three-minute exposure every other day after a douche or bath. Infrared and ultraviolet rays were allowed to play on the naked body in a room kept at 25°–30° C. In 22 healthy miners it was found that the average calcium content of the serum was considerably lower before the solarium was opened than it was three months later. More instructive from the clinician's point of view was the result of an inquiry circulated among the miners last March. Of the 175 underground workers circularised, 94 sent in replies. Only 7 per cent. expressed doubts as to the value of this prophylactic measure, most of the workers being enthusiastic. Infections such as colds in the head were less frequent, and the incidence of one-day diseases fell from 208 in 1937 to 183 in 1938. Excluding accidents, in 1937 there were 9·7 days of sickness per head, and in 1938 8·5 days—a reduction of 12 per cent. About 12 per cent. of the miners noticed slight irritation of the skin when they first underwent treatment, and one miner who took off his coloured glasses to see what was happening paid for his inquisitiveness with an attack of conjunctivitis.

CENTENARY OF THE FATHER OF SWEDISH GYMNASTICS

This year Sweden is celebrating in various ways the centenary of Prof. Petter Henrik Ling, who died on May 3, 1839. The son of a poor clergyman, Ling was dogged by ill health most of his life, and indeed was condemned as an incurable consumptive when a young man. Though the public was inclined to mock at his views, it is to the everlasting credit of the Swedish medical profession that its leaders took Ling seriously, although he held no medical degree, and in 1831 he was elected a member of the Swedish Medical Society. He was the first director of the Central Institute for Gymnastics, which he helped to found. The principles he laid down seem as sound today as they were a century ago. The Central Institute has trained an army of experts in exercises helpful in health and in sickness, and the existence of such a centre has been the best safeguard against the squandering of the legacy of Ling's teaching. Poet and author, as well as pioneer in gymnastics, Ling was a pathetic figure with his hacking cough, laboured respiration, bouts of dyspepsia, choleric temperament and what was called rheumatism. He was 63 when he died.

PANEL AND CONTRACT PRACTICE

The R.M.O. Disappears

WHEN, in 1920, the service of regional medical officers was brought into operation, there had been many indications that practitioners would welcome the opportunity of obtaining the advice of Government medical officers whose experience and impartial position qualified them to advise on doubtful questions of capacity for work, and the Minister of Health hoped that the new service would remove many of the difficulties of insurance medical practice. With the outbreak of war the R.M.O. service has been suspended, and this is a suitable opportunity to consider in what degree this high hope has been realised. It would be idle to pretend that the service has been a popular one. The *National Insurance Gazette* for Nov. 23 says that one of the extraordinary things about it was that it got very busy indeed when a doctor's easy prescribing produced a loss of, say, £20 a year to the Drug Fund, but they never heard of any similar excitement if a doctor's easy certification produced a loss of £200 a year to the approved society. So much for the lay point of view. The attitude of insurance practitioners has been similar to that of the average householder towards the air-raid warden—one of enforced toleration.

The functions of the regional medical staff include (*a*) examining insured persons referred to them by approved societies, insurance committees or insurance practitioners and advising on incapacity for work, or on diagnosis and treatment with a view to restoration of working capacity; (*b*) inspection of medical records, investigation of prescribing and certification and the like; (*c*) carrying out inquiries on behalf of the Ministry or other Government departments, for instance, inquiries on behalf of the Home Office in connexion with the administration of the Dangerous Drugs Acts. The vast majority of examinations of insured persons are made at the request of an approved society. Thus in 1938 approved societies referred for decision as to incapacity no fewer than 450,703 cases, while practitioners referred 1992. Consultation references during the same period were 983 by societies and only 68 by practitioners. In a large proportion of cases the insured persons are found to be capable of work, but in many of these the insurance practitioner himself would have declared the insured person off the funds by the date of the examination or at least acquiesces in the view of the R.M.O. If the insurance practitioner differs from the R.M.O. he continues to certify incapacity, but it is by no means easy for the insured person to obtain further benefit. This causes irritation both to the insured person and to the doctor. There is, however, no doubt that the existence of medical referees is something of a safeguard against the practitioner who is inclined to issue certificates in an off-hand way. The keeping of medical records is, of course, one of the duties of insurance practitioners, but it is probably the least popular of them. The average doctor is more concerned with treating his patient than with making notes, and the visit of a R.M.O. who has to satisfy himself that a sufficiency of notes has been made is not calculated to please him. Still less is he pleased when his prescribing is called into question or there is the implied suggestion that he has been guilty of laxity in certification. This is not the fault of the R.M.O.'s, who, however delicately they tread, are received with a certain amount of suspicion. The R.M.O. will therefore depart unmourned by the doctors or patients. Perhaps when he returns after the war it may be possible to approach more nearly to the ideal of sweet coöperation and mutual consultation that the Minister of Health envisaged at his birth nineteen years ago.

GRAINS AND SCRUPLES

FROM A NORTH-COUNTRY PRACTITIONER

III

IT is well to avoid the controversy which rages from time to time about the already overcrowded students' curriculum. This seems to suffer like our educational system in general from being designed, not for what the majority will eventually have to do, but for the élite. Schoolmasters do not point to the general high level of their boys, and how well they are equipped for the life they are going to lead, but to the number of scholarships the brighter ones have gained. Similarly in medicine, with every specialty clamouring for a place, it is overlooked that the vast majority of doctors are going to end up in general practice. It seems a pity that apart from sporadic attempts in certain schools there is no instruction about its numerous pitfalls, financial, legal and professional. If such instruction were given our invaluable medical defence societies might have fewer claims. Young practitioners would have some idea how thin is the ice over which we constantly and thoughtlessly skate. If they were only told to read Douthwaite's excellent short book on the subject they might be saved from entering into business arrangements which are both unwise and unfair. Experience has been defined as the wisdom which enables us to recognise as an undesirable old acquaintance the folly we have already embraced. A little instruction would enable them to avoid the painful consequences of ignorance. At present it is not given.

In partnership arrangements it is not usually a question of guile on the part of the senior man; again it is usually ignorance. On at least three occasions I have found a senior man wishing to put a clause in a partnership deed giving him the right to bring in his son as a partner some fifteen or twenty years hence. The common practice of employing one solicitor and one accountant to act for both parties to an agreement often leads to ill-drawn partnership deeds. Adequate instruction would avoid deeds with no sickness clause and no method of dissolution of partnership; it would save a man from remaining a junior partner almost in perpetuity; it would make it clear to a young man that he will receive almost no income for six months after he starts work, though he may have to pay income tax on what he has booked but not yet received; it would stress the value and importance of book debts, the easiest method of keeping accounts, how to cut the drug bill, and how often to visit patients, so that they feel neither neglected nor overvisited. Nobody but the clerk to an insurance committee can have a full knowledge of all the rules and regulations which govern the working of the National Health Insurance Act. But a young man must know what he has undertaken to do, under the terms of service, in the way of certification, filling up forms, and rules about absence and deputies. When the patient breaks rules under the Act insurance committees regard it as due to ignorance. The practitioner on the other hand will find himself penalised very readily for any such breach. Fuller instructions might also be given on legal obligations and relations with the coroner.

* * *

Work for insurance companies is another branch of practice on which instruction might be given. It is often interesting, usually well paid, and has a way of growing if only the practitioner has some idea of what the company wants. Examination for workmen's compensation and other accident claims involves some knowledge of the company's point of view. Short reports difficult to decipher and sent in several days after the examination are of no use to them. Students should be told that what is wanted is a typewritten report dispatched on the day of examination giving a perfectly fair account of the history of the accident, whether the condition is consistent with the history, and what is the present condition. An opinion as to the probable duration of the disability, any complications which may ensue, the possibility of permanent incapacity, observations on the adequacy of treatment, and the effect of any pre-existing condition, should be given. Every word of that opinion the doctor must be prepared to substantiate under cross-examination. If one is not sure it is well to say so. Companies do not want a report biased in their favour—this only leads them astray. It is obvious though not always remembered that anything which the company's doctor may say in his favour to the person he is examining carries a great deal more weight than it should, and will be readily seized upon by solicitors. On the other hand when acting for one's own patient if an opportunity is given of a joint examination with the company's doctor, it should be looked on as a golden opportunity for reaching complete agreement as to actual physical findings and as far as possible as to opinion. By contrast examinations for life insurance are simple and straightforward. It is well to remember that companies soon tire of returning examination forms with a covering letter asking for the completion of the form by the answer to question 3b. which has been omitted. Young practitioners might also well be warned against the agent who calls to offer examinations on condition that a policy is taken out. After a few months it is quite certain that he will be doing the same thing elsewhere.

* * *

Ought we to write "Ichabod" at the beginning of any discussion on professors? Perhaps like bishops they have become too numerous to retain their old station. Probably they never were as great as their students thought. Probably also the lack of a retiring age produced characters in the old days because there was time for legend to grow about them. Names like Jowett and Butler were once household words and any Edinburgh man of seventy will tell you of the giants who ruled there in his days. The modern universities too had no difficulty in producing their quota. There is no doubt that senates are now appointing men of possibly even greater technical ability, but equally there is no doubt that they no longer guide and influence their students in the old manner.

Professorial functions are at a minimum threefold: to organise a department, to produce or inculcate original work in that department, and to teach. How often are the first and last of these functions overlooked when appointments are made, and stress laid only on the volume and to a lesser extent the quality of published works? It is still possible for a man to climb the educational ladder from elementary school to a first-class honours degree and thence by way of research grants to assistant lecturer, lecturer, and professor without ever having gone outside his own narrow specialty. Why should such an one be expected either to teach or to organise? One go-getter I knew kept a list of all the professors of his particular subject together with their ages, when they

were due to retire, and any special infirmity from which they suffered, which might leave the way open before the due time. He arrived long before his time. Whilst his department is probably well organised I imagine it would be futile for students to look there for inspiration.

* * *

For medical students this habit of the university is particularly unfortunate. In the premedical subjects there is a tendency to regard the students as a necessary evil—not to be taken seriously—an outlook which the students heartily reciprocate so far as the subjects in question go. If they next fall into the hands of a really snow-white physiologist, who feels his subject to be a pure science and believes that the majority of human reactions can be shown on a galvanometer or a smoked drum, their lot is even more unfortunate. Snow White looks on their desire to be taught such physiology as will have application to clinical medicine as a prostitution of his science. Doc, Sleepy, Grumpy and Dopey are left to sleep quietly at the back of the lecture theatre, while poor Bashful is picked out and persuaded to take a B.Sc. in physiology. When it comes to pathology they may find a bacteriologist in charge, who has no use for anything preserved in a bottle in spirit, or alternatively a formalin-hardened morbid anatomist with a healthy scorn for glorified market-gardening. Eventually when they come to the clinical subjects they find part-time professors, whose appointments are almost entirely honorary, who have been appointed because of their position on the hospital staff. The qualifications which well merited the hospital appointment have little or nothing in common with the functions of a professor. The best men are often so busy in lucrative practice that were it not for the status which a professorship gives, these twenty-pound-a-year appointments would always be filled with second-class men. The worst exhibition comes when a real materialist grabs the title and then decides to provide the students with exactly twenty-pounds' worth—so much and no more. The vast majority of doctors are grateful to those who taught them the elements of their profession; the trouble is that they so rarely feel it was the professors. The appointment of full-time professors does not supply the answer to the problem. The salaries offered are so much less than a good man can earn in private practice that the universities are once more under the necessity of hawking their vacant professorships in clinical subjects, and gratefully recording the acceptance of the second-best. Possibly the solution lies in reasonably well-paid part-time appointments with some limitation of private practice. The old-timers were what they were because they were general practitioners in their own lines. Should we not ask for the appointment of men who can teach, who can organise under them as many specialists as can be paid for? Should we not stop looking upon those who are really hag-ridden by specialism as the repository of all future revelation, simply because we cannot understand either what they say, or what they write?

PUBLIC HEALTH

THE CHIEF MEDICAL OFFICER ON NUTRITION

IT is a welcome sign of the times that the chief medical officer of the Ministry of Health gives so much space in his report to nutrition, for, as his predecessor said, nutrition is the foundation of the public health. The main activity of the Advisory Committee on Nutrition has been discussion of the budgets collected by the Ministry of Labour, the distribution of the population of Great Britain into income groups and the institution of dietary surveys. They propose to express the nutrients in the diets surveyed as consumption per head, which is surely better than the plan, which they also propose to adopt for calories and protein, of calculation per "man-value." There are so many standards of the relation of the needs of children and adolescents to those of adults that it is doubtful if the calculation per man-value, even of calories, has much significance, and as regards protein if it is not definitely misleading. Many dietitians think that the attempt to express the needs of children for the different constituents of diet as fractions of the adult male's should go into cold storage, possibly for ever. It is good news that feeding experiments involving the giving of supplementary foods belonging to the protective groups have made progress. The results may supply guidance in the desperately difficult task of feeding the nation in war-time. The chief medical officer rightly includes in his report the gist of publications of the League of Nations, on whose committees the ministry is represented by Dr. H. E. Magee. The giving of cereals before the age of six months is condemned by the League committee, and after this age suitable preparations of potatoes are recommended. The practice of American pædiatricians of giving ripe banana pulp to infants even as young as three months—a practice which has been adopted in feeding marasmic and cœliac babies at a somewhat later age in this country[1]—would hardly meet with their approval. The League committee also urges a more extensive use of skimmed and separated milk. In this country the supply of skimmed milk is now hedged round by such restrictions that it is almost impossible to procure it, and hospitals in urban districts are forced to skim their own milk when feeding children with cœliac disease.

It is heartening to read that the number of licensed T.T. herds of cattle has doubled in the period 1936–38, but it is regrettable that the number of accredited producers is nearing or has reached saturation point. Nothing is said on the controversial topic of pasteurisation, and a disproportionate space is given to undulant fever, 38 cases of which were reported in 1938. This may be, as the report suggests, only a fraction of the actual cases, but even so they bear but small relation to the new cases of bovine tuberculosis almost certainly initiated by tuberculous milk.

Reference is made to the Food and Drugs Act, 1938, and to the *possibility* under that act of the Minister of Health making regulations as to the composition of foods. It is to be hoped that the ministry will actively proceed in this matter and also make some attempt to protect the public against the use of misleading labels and advertisements. Section 6 of the act should serve as a check on extravagant and mendacious claims made by advertisers about commercial articles of food, but it will only do so if the ministry is fearless and ruthless. The section on meat inspection will be a gift to the vegetarians. It is almost unbelievable that dead one-day-old chicks or dead unhatched chicks have been used for the making of "chicken paste" as filling for pies in the Midlands. But such is the madness of an acquisitive age that commercial men sink to this level and we have to keep a Ministry of Health to prevent them.

1. Thursfield, H., *Arch. Dis. Childh.* 1927, **2**, 49.

LETTERS TO THE EDITOR

THE CHRISTMAS GIFT

SIR,—On Dec. 1 £278 13*s.* 6*d.* had been received in donations towards our Christmas gifts fund. This will enable us to distribute gifts to our annuitants, but we also have 300 to 400 beneficiaries on our books who are in receipt of regular and annual grants. Their circumstances are similar to those of our annuitants and in previous years they have also received the Christmas gift. I should be very grateful if those of your readers who have not yet contributed would send a donation, however small, to the Royal Medical Benevolent Fund, Christmas Gift Account, Wormingford, Essex.

Last Christmas we distributed £1174, and I hope we may be able to do the same this year, but time is short.

I am, Sir, yours faithfully,

Wormingford, Essex. THOS. BARLOW, President.

THE E.M.S. AND PARLIAMENT

SIR,—Certain developments affecting the Emergency Medical Service may perhaps be usefully discussed in relation to parliamentary questions which have appeared on the order paper during the past few weeks. The public anxiety as to the position of the voluntary hospitals, abundantly manifested in the lay press, has been reflected by questions in the House of Commons. The supersession announced by the Minister shortly after the outbreak of war (*Hansard*, Dec. 5) of the functions of the Central Medical War Committee by the Central Emergency Committee of the B.M.A. has been subjected to frequent criticism. Since the Central Emergency Committee appears to have been the sole or at least the chief advisory body of the ministry for the first few weeks of the war, to that committee must be ascribed the main responsibility for the measures taken during that period. As correspondents in THE LANCET and elsewhere have pointed out, the representation of the consultant class on that committee was so small as perhaps to explain the manifest lack of appreciation and knowledge of the position of consultants in London. This has been one of the principal causes of the breakdown of those arrangements, resulting in the complete reorganisation of this part of the ministry's work after Oct. 18. A new advisory committee then came into operation following upon the important meeting of the Royal College of Physicians on Oct. 12, at which the college decided to take a hand in the future negotiations with the ministry.

As lately as Nov. 2, in answer to a question put by me, the Minister revealed that up to that date only 23 out of some 700 members of the honorary staffs of the London voluntary hospitals had accepted any of the several schemes for part-time service offered. The most mischievous effects of this clearly lay in the practical cessation of two activities, impossible of achievement in the absence of an honorary staff—namely, the conduct of the outpatient, general and specialist departments, and the systematic education of medical students in London. Pressed upon this point, in an answer on Nov. 23, the Minister disputed the accuracy of the statement that outpatient services had been in abeyance for ten weeks, but it is certain, notwithstanding ex-parte denials, that such outpatient departments as were being conducted were in fact carried on by junior and relatively inexperienced officers, mostly house-officers or registrars, with the inevitable result that patients coming from considerable distances for consultations and finding that the recognised specialists were not functioning did not repeat the experience, and consequently one of the most important functions of the teaching hospitals—that of offering consultations to the patients of practitioners outside the hospitals and often in districts remote from London—has largely faded out. The volume of the service to the community rendered by the voluntary hospitals in this connexion may be gauged by figures in the current report of King Edward's Hospital Fund for London, which shows that in the last year on record (1938) 10,260,000 outpatient attendances were registered at voluntary hospitals in London alone.

How far the new conditions named by the Minister (*Hansard*, Nov. 23), and so ably summarised in your issue of Nov. 25, will mitigate the present impasse remains to be seen, but it seems obvious that had it not been for the action taken by the colleges the very unsatisfactory preceding conditions would have remained unaltered.

The second important activity, only to be discharged by the honorary staff, is the teaching of medical students in London. Inasmuch as London schools receive three-fifths of all the medical students south of the Tweed the restoration of their activity is urgent. The apologists of the Emergency Medical Committee, it is interesting to note, are adopting the rather unexpected argument that the teaching of students has been in fact more satisfactory during their evacuation from London than in normal times, and this argument has been sustained in the public press by the dean of a teaching hospital, who is also a sector leader. The implications of the argument are surely somewhat dangerous to the continued existence of the medical schools in London, if it is seriously contended that the arrangements praised, which constitute a revival of something like the apprenticeship system, are a superior method of teaching to that evolved after many years of experience at the medical schools, and necessitating as it does a continuous and progressive prolongation of the medical curriculum.

Another aspect of the E.M.S. which has attracted parliamentary attention is the question of the responsibility for the selection of sector leaders in the first instance. Answering Mr. de Rothschild on Nov. 23, Mr. Elliot said that "the group officers were appointed as representing the voluntary hospitals in London sectors," but he did not disclose how the appointments were made. From information supplied to me, neither the medical committees nor the boards of management were in all cases consulted as to the selection of these officers. In some cases the medical committees were informed that a certain officer had been "appointed" and confirmation was obtained for his appointment from the committee after it had in fact been made. No contact appears to have been maintained either with the medical committees or with boards of management by the group officers, who are nevertheless described by the Minister as "representatives of the staffs," and some of the obvious misfits and misleading instructions resulting from these conditions have contributed largely to the dissatisfaction prevalent in many sectors.

A circumstance which accentuates the responsibility of the sector leaders is that the Minister, in his desire to avoid any suspicion of wishing to abolish the voluntary system, has sedulously avoided interfering with the arrangements made by those officers. In some instances members of honorary staffs have been

misled by their sector leader into believing that a modicum of private practice was not incompatible with their acceptance of whole-time service, and then have been confronted with a subsequent announcement from the Minister that such action obliged him to regard them as having accepted part-time service on the basis of the offer made by him in the circular of Sept. 18 (i.e. four-sevenths service on one-third pay), a scheme which up to Nov. 2 had attracted only five applications (*Hansard*, Nov. 2). The relations of the sector leaders to their colleagues on the staffs of their respective hospitals will surely have to be overhauled if any normal working of the hospitals is to be resumed.

I have dwelt more particularly on the essential importance of a return of an adequate number of the honorary staff, but the necessity of bringing back a due proportion of the nurses, without whom the proper treatment of the sick cannot be carried out, is equally pressing.

Some of the confusion which has overcome the E.M.S. must I think be ascribed to the contradictory advice tendered to the Minister by committees and individuals whom he was justified in regarding as representative of the profession. Thus the chairman of the British Hospitals Association war emergency committee states in a letter to the press today that "at a recent meeting called by the ministry for the express purpose," his committee, responsible for hospital sector organisation, "expressed the view that at the present time the needs of the sick did not demand a more general reopening of voluntary hospitals in London." This dictum, which has not I think been made public earlier, is obviously in conflict with such expressions of public opinion as have appeared in the press and in Parliament. Until the profession can speak with something like a united voice through its representatives there is little prospect of a happy resolution of the existing chaos.

I am, Sir, yours faithfully,

House of Commons, Dec. 8. E. GRAHAM-LITTLE.

BURN WARDS

SIR,—I was much interested in Mr. Dennison's account in your issue of Nov. 25 of a five-year series of 398 burns and scalds treated in the Royal Hospital for Sick Children, Glasgow. I would like, however, to draw attention to a statement which he makes which is incorrect—that the three teaching general hospitals in Glasgow send on burned and scalded babies to the Royal Hospital for Sick Children. Apart altogether from the implication that these hospitals ignore the urgency of immediate treatment of burns, I can assure Mr. Dennison that as far as the Glasgow Royal Infirmary is concerned these cases are not sent away but are treated in the two special burn wards with their associated shock room and theatre. Over twenty years ago, thanks to the enlightened policy of the managers, wards were set aside solely for the treatment of burns and scalds.

From October, 1935, to October, 1938, these wards were under the care of Mr. G. C. Swanson and for two of the three years I was the member of his surgical unit whom he deputed to take charge. Over 800 patients passed through our hands, about 34 per cent. of these being children of three years or under. For most of that time the coagulant used was 0·5 per cent. crystal violet with 1 in 2000 brilliant green, suggested by Dr. Robert Cruickshank. The death-rate was about 8 per cent. and if deaths occurring in the first twelve hours were excluded it was 5 per cent. In this series I never saw a case of blood-stained vomiting.

When comparing two six months' series of cases, the one treated prophylactically with sulphanilamide, the other without, I was struck with the comparative rarity of the hæmolytic streptococcus and how seldom its presence was of grave significance.

It is the fashion now to treat all oily dressings as anathema, yet for burns of the face a simple face-cream has been the routine treatment in the Royal Infirmary for years. The cream is copiously applied without dressings and renewed as often as necessary. The cosmetic results are excellent.

To speed up the healing of raw areas in children I found buried reverdin grafts extremely useful, local anæsthesia proving quite effective.

I am, Sir, yours faithfully,

Glasgow. TINA GRAY.

A PLAN FOR BRITISH HOSPITALS

SIR,—I have read with interest the article in your issue of Oct. 28 entitled "A Plan for British Hospitals," as well as the numerous letters in subsequent issues commenting thereon. Judging by the tone and temper of some of these letters your special commissioner can certainly claim that the "Plan," whether good or bad, has made the medical profession "think furiously."

Personally, I feel that this is not an appropriate moment for the discussion, much less the formulation, of any sort of comprehensive scheme of the hospital services of this country, whether voluntary or municipal. My reasons for this view are briefly (*a*) that everything depends upon the duration of the war, and (*b*) that the medical profession is not at the moment in a proper state of mind to discuss and decide any big issues affecting either the hospital services or the profession itself. It must surely be obvious to the most superficial thinker that if the war lasts, as some think it may, for at least three years and possibly longer, the whole structure of our social services must be gravely affected. On the other hand, if, as some optimists think, the war is over in the spring of 1940, the position we should then have to consider, whether with regard to our hospitals or any other of our social services, would be entirely different.

As I have said above, the medical profession is not in a state of mind at the moment to give thoughtful consideration to such fundamental issues as are raised in "A Plan for British Hospitals." There is just now a great deal of quite natural irritation and indignation in the minds of many of our medical colleagues arising from the fact that the war, more especially in regard to the Ministry of Health's emergency hospital scheme, has not gone "according to plan." Such a state of mind is more likely to lead to ill-advised conclusions than to well-thought-out constructive planning. For these reasons I do not propose to discuss the "Plan," or the conclusions set out on pages 950 and 951, or any of the letters thereon from your numerous correspondents. I should, however, like to place before the minds of your readers a few thoughts which have occurred to me as the result of over thirty years of intimate experience of both voluntary and municipal hospitals.

(1) I am convinced that in any scheme or "Plan" dealing with the future development of our hospital services in this country, we should place the voluntary hospitals with medical schools attached to them in a category of their own. In the event of any further financial assistance being required for such hospitals from public funds, such financial aid should be by means of state grants, and not from the rates of local

authorities. In other words, voluntary hospitals with medical schools attached to them should be regarded as national institutions and not local institutions.

(2) All other voluntary hospitals should be regarded as hospitals providing for the sick of the locality in which they are situated. Of course such a statement must be interpreted broadly. Instances occur to the minds of all of us where the voluntary hospital concerned, although not primarily an institution for the teaching and training of medical undergraduates, is in fact recognised as not only a great teaching centre, particularly for postgraduates, but also a centre to which patients come from all parts of the country. Typical examples are such hospitals as the "National" (Queen Square) or Moorfields. There is much to be said for the inclusion of a careful selection of these in the same category as voluntary hospitals with medical schools attached. However that may be, the broad point I wish to make is that, generally speaking, voluntary hospitals without medical schools attached to them should be regarded as part and parcel of the hospital services of the area of a local authority under the Local Government Act, 1929. Such voluntary hospitals would be closely linked up with the municipal hospitals in the same local-government area. They would then be quite properly entitled to financial assistance from the local rates.

(3) Regionalisation and decentralisation, or whatever you like to call such schemes, must in my judgment be based either upon a well-defined local-government area, such as a county or a county borough or a combination of them. Any attempt to draft a scheme on the lines of any other geographical area will fail for the following reasons:—

In recent years many ancillary medical services have been developed in the area of such local authorities—e.g., school medical service, tuberculosis, venereal diseases, maternity and child welfare, including midwives, hospital accommodation for infectious diseases, and so forth. I do not see how it would be possible to deal with these services as a constituent portion of a comprehensive scheme or "Plan" unless the scheme or "Plan" is based on a unit, or combination of units, of local-government areas. It must not be forgotten that these medical services are a statutory obligation upon local authorities.

If it is contemplated that in any regionalisation scheme the voluntary hospitals in the area of the scheme shall receive financial grants from the rates, then it seems to me inevitable that any provision made by such voluntary hospitals for the treatment of the sick, &c., must be part and parcel of the arrangements made for such persons by the authority contributing the grant from local rates. In other words, the regionalisation scheme must conform with the duties and responsibilities of local authorities under the Local Government Act, 1929.

Finally, I should hope that in any scheme for the further development and better coördination of our hospital services, voluntary and municipal, every effort should be made to combine under one direction the prevention and treatment of disease, the provision of a much wider field for medical education, undergraduate and postgraduate, and last, but by no means least, ample facilities for the advancement of medical science by means of the encouragement of research. The immense advantages to be gained from such a combination under unit control have to be experienced in order to be fully appreciated. They were well on the way to realisation in the L.C.C. public health department when war came upon us in September.

I am, Sir, yours faithfully,

29 Egerton Gardens, S.W.3. FREDERICK MENZIES.

SIR,—The volume of correspondence which has been inspired by the masterly contribution of your special commissioner is an indication of the importance and also the complexity of the problems which confront the medical profession. The time chosen for the presentation of the plan is highly opportune. An appreciation of our present voluntary lack of system may serve to give direction to some of the drastic and costly measures which are being taken in the present emergency without interfering with their main object of giving the best possible service to the casualties of war.

Before we can discuss with profit such important questions as the location, staffing, finance and control of the hospitals of the future, it would appear to be essential that there should be created some central *thinking* agency which might later become the directing body if its proposals could command general assent. A central nervous system of this sort which could think and also apprehend stimuli from different regions and organs might well be modelled upon the existing organisation which obtains and distributes and advises upon the use of national radium, with a National Hospital Trust to evolve a scheme of finance and a National Hospital Commission to advise and coördinate the regional hospital councils. These regional councils would have a considerable measure of autonomy and might be a first step in breaking down the artificial barriers which are created by the dual system of voluntary and local authority control.

If a large-scale experiment is desired to try out such a scheme of central guidance and regional council, Scotland presents itself as ideal for the purpose with its very unequal distribution of population, wide range of economic grades, important medical schools, large voluntary and municipal hospitals and all the problems of transport by rail, road, sea and air. In addition it has a Department of Health which has successfully solved a very difficult problem by its Highlands and Islands medical service and could be trusted to make a valuable contribution in any national scheme.

With the evolution of an appropriate scheme in each region under the general advisory supervision of the hospital commission, the hospital trust would be concerned with the allocation of central funds to regions in which special investigative work deserved encouragement or where poverty made a satisfactory service upon purely regional contributions impossible. The whole conception would be further clarified if one other major decision could be made at an early stage. We must decide upon the standard of service which the medical profession as a whole intends to offer to the nation in the difficult years which lie ahead. Until this issue is settled, all decisions and expressions of opinion can only be conditional. By the word *standard* we do not suggest any difference in quality of work or sense of duty on the part of the individual doctor, practitioner or specialist, but rather the scope of the organisation of which he forms a part. The efficiency and discipline of the crew of the humble minesweeper may be as fine as that of the great battleship but the size and power and value of the two units are widely different. Do we intend to continue on the useful but subordinate basis of the small ship, with our activities largely controlled by the politician, the lay hospital board, the municipal committee and the friendly society; or do we intend to take ourselves at the highest level and exert an influence of the battleship standard upon national health and national welfare as do our legal brethren in their sphere of action?

A contemplation of the life and work and teaching of the master intellect whose death we mourn at this

time compels one to realise that the seemingly inexplicable mass movements with their recurring upheavals and catastrophic violence are capable of the essential primary analysis which must precede the attainment of reasonable stability in national and international affairs. In his sociological contributions, Mr. Wilfred Trotter did not follow a personal diversion but realised in its fulness the rôle of the medical scientist by touching upon life at every point and exposing the dangers of ignorance and insincerity and false reasoning which give the charlatan his opportunity and permit him to control the destinies of millions of his fellow men. If this wide view be proffered as a part of our national reconstruction, it will only be accepted if the medical profession has successfully placed its own house in order. If it be not proffered or not accepted, the house will still be the more comfortable and efficient by reason of its orderliness.

I am, Sir, yours faithfully,

Edinburgh. J. J. M. SHAW.

SIR,—Congratulations to you and your commissioner for having the courage to say that all is not well with British medicine and for producing a tentative plan for its improvement. Medicine is changing by gradual evolution. There is a continually increasing number of investigations and a consequent rising cost per patient, whether this cost be borne by the patient himself or by the hospital he consults. The voluntary hospitals, endowed by charity for treating the sick poor, are for financial reasons becoming more and more hospitals for the middle-class as well. Middle-class workers, ever increasing in numbers, can and do afford a consultant's fee. But they cannot face a long illness in an efficient and therefore expensive nursing-home; in health matters all men feel they have right to the best opinion and attention, and the vast majority know they can only afford the best care by going to a hospital for it. The hospitals have allowed the admission of middle-class patients, not only from motives of pity, but also because they cannot afford to pay the whole cost of all their patients; even the sums available from the present insurance schemes go only a short way towards it. To assess the need for financial reorganisation of the voluntary hospitals, we must have facts rather than listen to opinions; somehow we must meet the increasing cost per patient, while at the same time expanding our service and improving our efficiency.

As to whether consulting practice is moribund or not, the opinion of general practitioners is a sure guide. Questioned as to what sort of consultants they want, they give two types of answer. Some want men of wide experience to help them in their difficulties; others say that they and their patients demand only specialists. Both groups are unanimous in their need for a higher opinion on certain occasions. General consultants, specialists, consultant clinics all have their advocates; but some form of consultant is needed by all who practise medicine, from the youngest G.P. to the most experienced London honorary. The question is not whether there should be consultants, but how much and in what way the community is to pay for them, and how their services are best to be made available.

The controversy of the whole-time salaried versus the part-time honorary hospital staff is a part of the consultant question. Temperamentally men are very diverse. Some members of the consultant ranks faced with a family, vast overhead expenses, and an ever-diminishing fraction of their time available for original work, would welcome an assured if moderate income with the prospect of a pension. Freedom from financial worry would allow them to apply all their energies to their hospitals, their students, and the advance of medicine; their competitive spirit and frank criticism would be used in scientific matters. On the other hand, many delight in the open struggle, in the competition with their fellow men, in which their success is measured tangibly by size of income. For them, because of the present trends of medical practice, the chance of making large incomes must gradually diminish; it will become increasingly difficult to provide their own pension, or even to cover the expenses which such conventions as a Harley Street address impose upon them.

Before deciding to increase the number of salaried senior men in the teaching hospitals, various bogies must be laid. First, that a sense of security destroys the spirit of inquiry and the urge to advance medicine. Second, that a whole-time officer fails to develop or loses that personality so essential in medicine. Third, that the strong personal relations between hospital officers and patients and between general practitioners and members of hospital staffs, so characteristic of British medicine, will disappear if the consultant holds a whole-time salaried post. The experience of whole-time units in the voluntary hospitals is that such fears are groundless; the answer to these bogies depends ultimately on the personality of the members of the staff, not on their organisation.

After the war the world will not be the same place. All men will be poorer, all incomes lower. The future efficiency of medicine depends on providing the opportunity for all classes to receive the best opinions and treatment regardless of their incomes. If the best brains are to be attracted to the practice, the teaching and the advance of medicine, radical financial reorganisation will be necessary, including the expansion of provident schemes and increasing government support. Let the medical profession plan for the future; let the younger members who will then be in the fore-front evolve a practical scheme to increase their own efficiency and improve the medical services of the country; let them enlist the help of many experts, old and young, administrative, technical, financial. Only by making us think and plan will the disruption of war have been useful to us.

I am, Sir, yours faithfully,

Queen Anne Street, W.1. H. K. GOADBY.

*** We have invited Lord Horder to sum up this correspondence.—ED. L.

STORAGE OF TRANSFUSION PLASMA

SIR,—I was very interested in the paper by Dr. Knott and Dr. Koemer in THE LANCET of Nov. 18. There is probably a great future for plasma in the treatment of shock, for the reasons they give. In pure shock, intravenous saline is discredited, gum-saline is usually ineffective, and blood-transfusion may be dangerous, owing to the high viscosity of the concentrated blood which is sometimes found in the patient's reduced circulation. By giving plasma one is replacing part of what has been lost from the circulation, and one is administering a physiological solution which is likely to remain longer in circulation than any substitutes such as gum-saline.

May I suggest that the two problems of agglutination in the recipient and fibrin deposits in the storage bottle could possibly be solved as follows? No time should be lost in cross-matching or estimations of agglutination titre when urgent treatment is required. An agglutinin-free plasma would therefore be dis-

tinctly advantageous. However, unless some agglutinin absorption plan could be devised, it would be impossible to obtain such plasma from bottles of group O blood. Despite their relative rarity, there must have been many thousands of group AB (group 1) volunteer donors in recent months who were anxious to help, and who were disappointed by being told that their blood was unsuitable for transfusion, because only group O (group 4) blood was required. It would not be difficult to collect large numbers of these volunteers whose names are no doubt recorded in the centres, and utilise their agglutinin-free plasma. Repeated filtration to get rid of fibrin deposits would appear to be unnecessary if a filter were incorporated in the apparatus for giving the blood—as is in fact done in the Army blood-transfusion service. If some such modifications as these can be made, there seems no reason why considerable stocks of "universal" plasma should not be available for treatment of shock cases in the war zone when serious hostilities begin.

I am, Sir, yours faithfully,

B.E.F. ADRIAN C. KANAAR.

DENMARK'S DIETETIC DILEMMAS

SIR,—May the "Something between Cassandra and Joan of Arc," which is me, be allowed to correct a little misunderstanding of your Danish correspondent (Nov. 18, p. 1086). When he implies that margarine, bacon, sugar and flour are the causes of the known Danish obesity he is correct except for bacon, which is totally innocent. Bacon is made for export and is practically not to be had in Denmark unless it is reimported. The fat eaten in Denmark is (1) margarine (ca. 20 kg. per person and year); (2) the flesh of old sows, too fat for the English taste—i.e., practically without albumin (this fat is the least valuable part of the pig, not fit for export); (3) butter. In a later paper I intend to point out the connexion between the fat-consumption in Denmark (the highest of all countries) and the high morbidity and mortality of certain diseases, especially cholelithiasis, which has a far higher incidence in Denmark than in all other countries. The high morbidity of gall-stone, diabetes and cancer coincides with a very low mortality of infectious diseases, caused by the rather high hygienic standard of Denmark.

I am, Sir, yours faithfully,

Copenhagen. JOHANNE CHRISTIANSEN.

INTERRUPTION OF MILK AND MEAL SCHEMES

SIR,—Before the outbreak of war there existed in Glasgow and elsewhere comprehensive schemes for supplying necessitous children with free meals, and a large number of children in the schools with a third of a pint of milk daily at the price of ½*d.*, the necessitous children receiving this for nothing. The benefits to health accruing from these schemes were acknowledged by all medical authorities. Since the war the children have, in many cases, not been attending the schools through which the schemes were operated; as a result, the whole organisation of distribution has fallen into abeyance. The evacuated children are receiving nothing by way of free or cheap milk unless some welfare committee in the reception area decides to undertake the provision of it. So long as there is no question of a lack of food, arrangements should be made between the authorities in the evacuation and the receiving areas to ensure the continued working of these schemes. It does not take long for any improvement due to better nutrition to disappear, and the end result of a long period without the extra food may prove more costly to the nation than would the continuance of the supply. In addition to the milk schemes for school-children, there are also in existence schemes for the provision of free or cheap milk to pregnant and nursing mothers, but here again the schemes are not being operated as efficiently or as comprehensively as before. Is it a case of "women and children last" in this war?

I am, Sir, yours faithfully,

Glasgow. M.B., Ch.B.

FIRST-AID POST DOCTORS

SIR,—One can't congratulate the B.M.A or the Minister of Health on the new scale and conditions for doctors at first-aid posts. The doctor will now receive 4*s.* 9¾*d.* per hour for the two hours required of him three times a week. For this he will have to (*a*) train the personnel, (*b*) supervise the voluntary staff and nurses, (*c*) carry out collective training, (*d*) be responsible for the stores, (*e*) be responsible for the general maintenance of the post, (*f*) be responsible for correspondence on administrative matters concerned with the post and thus become a temporary officer *under* the local authority, and (*g*) attend during an actual raid. As regards (*a*) this has already been done by lecturers under the B.R.C.S. and St. John Ambulance and many practices have been carried out not only by mock raids but also at the posts. Some doctors have been appointed who have never given a lecture before and few have had the required practice themselves. As regards (*b*) this has hitherto been carried out by specially qualified persons either from the associations or the local authority. Both training and supervision of staff have further been under the eye of special A.R.P. medical officers who also have had to do with (*c*), (*d*) and (*e*). A former circular threw the responsibility for stores and general maintenance on the local authority, from whose hands these are now taken. This will make for friction. The correspondence in connexion with each post is sometimes enormous, as one who has been dealing with it knows. This is likely to increase with these doctors who are not well up in all the details of government circulars and memos. I take it that the lady "officers in charge" of posts will now give up that title and will be called matron of the post or head sister. There has already been a link between the M.O.H. and the posts, and a harmonious one with the A.R.P. medical officer and the lady "officers" or matrons at the posts. There was no call to disturb the existing conditions.

I am, Sir, yours faithfully,

FIRST-AID POST MEDICO.

THE WRITING ON THE WALL

SIR,—My Grains and Scruples which you were kind enough to publish in August of this year drew a prompt rejoinder from my good friend D V H., which need no longer be concealed by the veil of anonymity.

"Professors do not scruple to mix their grains with spice. They write with light abandon of subjects not quite nice—of chamber-pots and bawdy walls, of phallus and of teats, that undergrads may understand dons keep their youthful Witts."

It would nevertheless appear that the subject of lavatory scribblings is of interest to many and I should like to increase the general fund of knowledge by the following contributions from correspondents who had read my remarks.

A woman doctor, C.C., writes:—

"In my experience of lavatories in girls' schools, lavatories in women's colleges and public lavatories for ladies, I have never seen 'the writing on the wall.'"

On the other hand, G.B.K. sends the following (undated) extract from the *West Australian* :—

"Endless expense has to be met in removing remarks from the walls and fittings in train and station lavatories. A railway detective said yesterday that the most obscene drawings and writing were those found on the walls of ladies' waiting and retiring rooms on station platforms. Women and girls were apparently responsible, as many of the obscenities were written or drawn with rouge and lipstick."

As far as concerns women's lavatories in England, private conversations leave little doubt that at present C.C. is right. This is confirmed by another lay correspondent, A.B.L., who describes himself as an amateur but appears to have pursued the topic with some seriousness.

"First, as to the incidence of these wall writings. My wife assures me that pencillings on the walls of women's lavatories are practically non-existent. As to men's lavatories I suspect a strong economic factor—even stronger than the colour of the paint on wall or door. Lavatory interiors are most highly decorated when the coin-controlled lock is habitually out of order, so that would-be scribes can enter without charge. A certain cubicle in Barking station has a lock which is permanently defective, and the woodwork there, although mostly painted dark brown, is completely covered with sexual representations. The presence of an attendant in the lavatory seems to act as a deterrent; I put this down to the fact that free entry is no longer possible.

"As to the subject matter of the inscriptions, besides the invitations to homosexuality that you mention, they range over the whole gamut of perversions dealt with by Krafft-Ebing—masturbation, masochism, sadism, cunnilingus and its opposite, and the rest. The wall of a certain lavatory at the former Aldgate East station was covered with long and detailed accounts of perverse practices and experiences of various kinds including, I remember, a slave masochist who 'wanted more' and a gentleman who wore his sister's undergarments. Then there are certain short verses, about cleanliness and about wall writing, which I have seen in lavatories in Richmond (Yorks), Ramsgate (Kent), and Bournemouth (Hants). The subject is indeed fascinating and sufficient data might be compiled to make up an interesting monograph. There is even a suggested reason for the immunity of the walls of women's lavatories."

Perhaps one day he will publish his monograph and not leave us with an unanswered question in the last sentence.

I am, Sir, yours faithfully,

DOCTOR DON.

OBITUARY

RALPH STRANSHAM OLDHAM

O.B.E., M.D. DUBL.

Dr. Oldham, a principal medical officer of the Ministry of Pensions, who died on Nov. 26 after a short illness at the age of 59, was educated at Emmanuel College, Cambridge, and Trinity College, Dublin. Before the last war he was in private practice at Blackpool, and was also honorary medical officer to the X-ray department of the Victoria Hospital there. After serving throughout the war he joined, in 1919, the medical services of the Ministry of Pensions in which he became a P.M.O. in 1928. In 1932 his services were recognised when he was made an O.B.E. Possessed of a keen intellect, which scorned subterfuge, his work was characterised by a somewhat stern efficiency, and Oldham as a man was apt to mask his inner kindliness by an aloofness of demeanour and pungency of comment which made him difficult to know. But those to whom he gave his friendship realised his sensitive spirit which shrank from casual contacts. To them he revealed a broad humanity and natural charm by which he will long be affectionately remembered.

OSCAR BERNHARD

M.D. BERNE, PH.D.

IN the death of Dr. Bernhard of St. Moritz the Swiss medical profession has lost a vigorous mind and a forceful personality. Born in Samaden in 1861, the son of the local chemist, he got his schooling at Coire and studied medicine in Zürich, Heidelberg and Berne, where Kocher was then at the height of his fame. Returning with a bent for surgery to the Engadine, where there were then no hospitals and no railways, he built up a large surgical practice under trying conditions until under his stimulus in 1898 a fine district hospital was opened in Samaden and Bernhard became its chief surgeon. There he began to treat surgical tuberculosis and chronic septic cases with sun's rays, which have remarkable power at 5000 feet above sea-level.

The purity of the air was such that he was able largely to dispense with dressings in all his surgical work. He constantly brought his method up to date and published his results in "Light Treatment in Surgery" (1917), of which an English edition appeared in 1926. Dr. Bernhard's other activity was the organisation of first-aid for alpine accidents, and at St. Moritz, where he had a private clinic, he specialised in the treatment of winter-sport injuries. In his spare time he studied numismatics and he wrote a book on Greek and Roman coins in relation to the history of medicine. For this the University of Berne conferred on him in 1931 the degree of Ph.D.

ANTON von EISELSBERG

BRIEF reference has been made[1] to the death from accident of Prof. A. von Eiselsberg who occupied the chair of surgery in Vienna for some 30 years. In an appreciation of his career in a German journal Dr. Breitner of Innsbruck describes Eiselsberg as a restless searcher after truth rather than a mere skilful operator. The secret of his success in advancing our knowledge of the thyroid gland and of the causes of postoperative tetany was his genius for illuminating a problem from many angles. It was natural enough for a pupil of Billroth to take a special interest in abdominal surgery, a subject to whose technical problems Eiselsberg contributed much. The same was true of the surgery of the nervous system and plastic surgery. As a teacher he had the gift of inspiring enthusiasm, and as a clinician he earned the affectionate gratitude of his patients. Many honours were bestowed on him both at home and abroad, and the Royal Society of Medicine showed its appreciation of him by electing him an honorary fellow.

Dr. MARTIN RANDALL, who died at Haslemere on Dec. 7, aged 71, was a fellow of University College, London. After qualifying in 1892 he filled house appointments at U.C.H., the General Lying-in Hospital and the General Hospital at Bristol. He qualified for a gold medal with his London M.D. thesis in 1894 and took his F.R.C.S. in the following year, settling in general practice in Wimbledon. He early became associated with its cottage hospital, first as medical officer and later as surgeon, noting many interesting cases in the medical press.

1. *Lancet*, Nov. 4, p. 990.

. . . . IN ENGLAND—NOW

(FROM OUR PERIPATETIC CORRESPONDENTS)

"HERE we are again"—our general hospitals in Liverpool back to their normal number of occupied beds. War or no war, men and women get their appendix troubles, their malignant disease, their digestive lesions, their thyrotoxicosis, their babies (*plus ça change, plus c'est la même chose*). Yet neither hospital nor its doctors and nurses are quite as they were, though they are occupied with the old sort of work which is always coming to hand. The sandbags outside have changed the old familiar ugly contour, and inside there is an "atmosphere." We are on the alert, with that slight tenseness which even the old cricketer feels as he sits with his pads on, waiting to go in to bat when the next wicket falls. There he is, lolling in the sun with eyes half closed and apparently not bothering about the game; but if a wicket does fall, he is ready. He has had a good look at the fast bowler's in-swinger to that close circle of short legs, he has his plans for dealing with it, and he thinks that he can spot the googly of the spin merchant at the other end; for he has not really been inattentive during that wait on the pavilion balcony (maybe knitting a khaki scarf). When he does have to go out into the middle, he will bat all the better for that anticipatory tension, that slight straining at the leash.

Beds for tuberculous cases are again becoming available, also. The municipality is opening up a larger proportion of their prewar provision, but only (so it is rumoured) for advanced sputum-positive cases. The little hospital for consumption, which though evacuated at the outbreak of war carried on its outpatient clinics, has now reopened its wards. Reasonably early cases, for whom active treatment is desirable and greatly worth while, will have to find accommodation somewhere; for prevention, like patriotism, is not enough. Already since the war, the general hospitals have encountered more patients with phthisis than they have seen for years, diagnosed them and instituted some form of treatment; indeed, one of our group, I am told, has even replaced its old museum piece by a modern type of A.P. apparatus.

We expect to be something like our full normal selves by the end of the financial year. On April 5, 1940, the Grand National will be run at Aintree. The date is rather later than usual, but I imagine that the authorities have in mind the kindly thought of giving us the chance to tot up and make sure whether we have even a shirt left to put on the horses.

* * *

The impenetrability of the blackout curtains in my bedroom has provided me with a new delight. One morning, when I awoke, I saw on the wall the shadow of a tree slightly stirring in the breeze. Even in my semi-stupor this puzzled me, and as consciousness gradually returned I realised that the tree was upside down, and next that all round the room were images of roofs and chimney-pots from over the way, and all upside down. The truth suddenly dawned on me. Camera obscura and the pinpoint cameras of my boyhood! Sure enough, there was a gap at the top of the curtains where they should have met, a gap no larger than the nail on my little finger. Later, in the afternoon, in the bright sunshine, I repeated the experiment, drawing the curtains except for a tiny aperture, and on the opposite wall appeared a bright image of the sun, with clouds scudding over its face, and the whole array of roofs, gables, chimney-pots, and tree-tops, all of them in inverse order from right to left, and all of them upside down—an appropriate symbol in this topsy-turvy world.

* * *

We went down to Brixton and had lunch there—collops, bread and cheese and beer—in one of the improved public-houses where a city clerk or a shop manager can take his wife without loss of caste. There is a large saloon with a good bar downstairs and upstairs a first-rate restaurant. The improvement in this type of house is great, and with the blackout they are doing a roaring trade every evening. For those not yet arrived at an age when a chat in company with friends over a glass or two of beer is an entertainment, the darkening of the streets is a serious loss. It was not only in the poorest districts that a walk after the evening meal is a usual occupation—looking in the shop windows, meeting friends and chatting first with one group and then with another. Of course it was unavailable in wet weather; but then the weather is never always wet and one doesn't mind staying in on a wet evening, if one can get out on fine ones. Now it is always black.

After lunch we went into Woolworth's. It is much bigger than the one in our High Street and we revelled in it. It was the slack time of day, but by 1.30 P.M. it was already filling up, and in another hour was probably packed so tight that you would only be able to move sideways along the aisles between the shoppers. Gas-masks make a bit of difference to room in Woolworth's. We twice each lost the other, and our purchases were as follows: ¼ lb. liquorice allsorts (the missis's latest), 3*d.*; ¼ lb. liquorice plain, 3*d.* (pure sentiment on my part, a memory of childhood—I hate the stuff today, but it will keep till we see the grandchildren); ¼ lb. roasted pea-nuts, 2*d.* (at the big Woolworth's they also have roasted mixed nuts at 6*d.* which we cannot get in our High Street; we looked at them like children in a pastry-cook's but came to the conclusion they were not worth the extra 4*d.*); a doormat, 6*d.* (to wipe our feet when coming in from the garden); an aluminium saucepan, 6*d.* (as a night-starvation food heater); a scrap-book, 6*d.* (she has one, so why shouldn't I, for the war-time? I give myself two pages before I drop it); a packet of grease-proof paper, 3*d.*; another ¼ lb. pea-nuts, 2*d.* (I had nearly finished the first); 2 refills of shaving soap, 6*d.* (no comment); a combined comb and hair-curler, 6*d.* (a present from me to her—they were selling like hot cakes) another ¼ lb. of pea-nuts, 2*d.* (in case we ran out next day, Sunday); total expenditure, 3*s.* 9*d.* It is a place that runs away with the money; but some of the displays are very remarkable. There were artificial flowers that one almost felt willing to use for table decorations, and laid out on plush under a light there was a necklace that looked like moonstones and that made us feel the sixpenny rule must apply to each bead; but we found that it was for the whole chain. Prices are going up. There were no sardines at threepence, but in their place at that price were tins of minute herrings. We bought one and tried it for breakfast. They were excellent, so far that is as herrings can ever be excellent; for the human race in respect to herrings is divided into two classes—those to whom they are the finest of all fish rivalling in flavour the salmon and the sole and surpassing all meats in the variety whereby they can be served, and those to whom they are so physiologically nauseating that to be in the presence of the smell is a hardship. This last is sometimes not appreciated by the eat-more-herrings brigade.

But it is the paper shortage that is most likely to be felt by every member of the community. Already pads of scribbling paper are much smaller for the sixpence and packets contain fewer envelopes. The rise in price is thus masked and the casual housekeeper does not notice it until she picks up a fourpenny roll of lavatory paper, when her arm jumps up into the air from its unexpected lightness.

ANTISPASMODIC.—If you indulge in detective fiction of the lightest possible vein, Josephine Bell's little fantasy "From Natural Causes" (Longmans, Green and Co. Pp. 269. 7*s.* 6*d.*) makes easy reading. It relies on method for its mystery, and is therefore simply constructed, requiring little unweaving. The setting is medical and creditably accurate.

PARLIAMENTARY INTELLIGENCE

ON THE FLOOR OF THE HOUSE

By MEDICUS, M.P.

THE debate on the Address last week was discursive to some extent as such debates always tend to be, but on the Tuesday it was wound up by the Minister of Health in a speech in which he gave the House some new and interesting information. Lord Nuffield has offered to the Government through the Minister of Health one million ordinary shares in Morris Motors Limited as a gift to a central fund for the coördination of hospital finance and policy in the provinces. A board of trustees has been set up, and their duty will be to see that this fund is applied to the organisation of "the proper relationship of the voluntary hospital to the municipal hospital and the coördination of the hospital system as a whole," to use the Minister's words. Under war conditions the tendency towards a civil service organisation of the medical profession and the hospital and allied institutions is very strong. This gift will go a long way towards securing that any move in that direction will not be undertaken without taking full advantage of the good qualities of both municipal and voluntary organisations and securing for voluntary and teaching hospitals that place in the future organisation which their past contributions to the relief of suffering and to medical science deserve.

The Minister did not make it clear whether the scheme applies to Scotland as well as to England and Wales, but it was generally assumed in the House that it did so.

• • •

Mr. Elliot announced at an earlier stage of his speech that he and the President of the Board of Education "hoped shortly to complete arrangements for a far greater concentration of medical effort on the school-children than ever before." The Minister has been looking at decontamination posts, with their neat arrays of showers for washing, with rooms for dressing and undressing, and wants to beat the A.R.P. apparatus of war into the school bath of peace, at least until such time as gas-contaminated cases arrive. The suggestion that the medical services for children shall be made more efficient in the near future, instead of less, met a sympathetic reception from the House. If the story of the evacuation of children has revealed the great need of baths it will be at least some consolation if they are found ready provided in the decontamination centres. There is a strong desire on all sides of the House that the bad conditions revealed so dramatically to the ordinary layman by evacuation shall be substantially, and as rapidly as possible, ameliorated.

In the course of this speech Mr. Elliot revealed the great improvements in public health which have taken place since the end of the 1914–18 war. In 1919 the general death-rate was 13·8 per 1000, while now it is 11·6. The tuberculosis death-rate was 1261 per million against 602 per million now. (But we do not yet know how many new cases will arise under war conditions, which involve considerable clearances from tuberculosis sanatoria.) The Minister put health statistics in another way. "Our system had given us a lower infantile mortality than Germany, a lower maternal mortality than Germany, it had given us not only a freer but a stronger people than Germany." We have built over 4 million houses, by private and municipal and government effort, since the other war, and we have embarked on the fifth million, but that has been held up.

Other points which were mentioned is that our social services, which are still increasing and improving, cost about £540 millions in a year, but the House is uneasy as to what will happen to these social services if war continues. The war up to date has been called a fortress war, a war of siege. How tight is that siege to be? What amount of money shall we require over and above what we are already spending? If further demands come, will the social services suffer? These questions are at the back of many members' minds.

In another part of Mr. Elliot's speech he referred to a survey made of over 1000 families throughout Great Britain, in which Sir John Orr collaborated. These studies show that in the last 3 to 5 years there has been a notable increase in the consumption of the most nutritious foods. Put in percentages of certain of the constituents, there has been an increase of 33 per cent. in the consumption of calcium, 20 per cent. in the consumption of iron, and 160 per cent. in the consumption of vitamin A.

It was after giving the general survey that the Minister announced Lord Nuffield's gift, and linked this with the need of undertaking such planning as we could while realising that planning in full detail was not possible. The motto of this war is not to be "business as usual" but "planning for the future."

• • •

Wednesday gave us another of Mr. Churchill's breezy statements, after which the debate moved on another stage. During this stage a suggestion was made that in order to equalise the burden of active fighting services the classes from 21 upwards should not be called seriatim, but there should be an attempt made to pick out men of the classes between 21 and 41 so that all sections of the community could serve, and so that a representative number of the youth of the nation would remain after the war to be the fathers and mothers of a new generation. How far the war will involve women's active service cannot yet be estimated. There are many *x*s in the problem of after the war, so let us keep as much of our youth as we can. Wednesday was the last day of the 3-day parliamentary week and ended in a debate on the restrictions which are hampering trade. The House was not too reassured by the Government's replies. But earlier in the day the Prime Minister had announced that the House would adjourn on Thursday, Dec. 14, and reassemble on Tuesday, Jan. 16. This is welcomed on all sides, as the usual summer recess was very much shortened and the House met in August, since when it has been inundated with business.

The House and ministers are stale and need a holiday, which, however, ministers will not get in any full sense. But a break will be useful and the New Year may bring a new perspective.

FROM THE PRESS GALLERY

Planning for the Future

IN the House of Commons on Dec. 5 Mr. ARTHUR GREENWOOD, in moving an amendment to the address in reply to the King's Speech, said that it was apparently the Prime Minister's view that they must wait until the war was over before they could begin to think about the future. He urged that during the war the obvious social injustices ought to be remedied. —Sir SAMUEL HOARE, Lord Privy Seal, agreed with Mr. Greenwood that if we did not win the peace we should not win the war; but he would prefer to say that we could not win the peace unless we won the

war. Our objective should be to win both. The Government was just as anxious as Mr. Greenwood to have plans ready for peace when it came. But he did not believe that when they were so completely concentrating on the war they could give the full attention to peace problems which Mr. Greenwood seemed to desire. It was difficult to make precise plans when nobody could say what would be the conditions at the end of the war, except that the world would be much poorer than it was today.

FOR AND AGAINST STATE MEDICAL SERVICE

Dr. EDITH SUMMERSKILL wanted the Ministry of Health to consider what they were going to do with the vast reorganisation of medical services which had come about during the last three months. She asked the ministry to consider instituting a state medical service which would eliminate private profit from the treatment of disease. The framework of such a service had been provided during the present war. We had for the first time unified control and state remuneration of doctors. Doctors were giving full-time service at their hospitals, instead of rushing to and fro between the hospitals and their private practice. For the first time young doctors in hospitals were being paid an adequate salary instead of the £100 or £150 they would get as house officers in voluntary hospitals. If the state had decided that this was the right way to treat civilian casualties in war-time, why not treat civilians in the same way in peace-time? There was a new school of thought in medicine which believed that the voluntary-hospital system was out of date and had completely failed. Sentiment should not blind them to realities. Why should the voluntary hospitals have to finance themselves by going round cap in hand? On the present system they could not afford the finest equipment, and their medical staff, who should be adequately remunerated, had somehow to collect enough money in their private practices to pay for their commitments. A brilliant man might have to struggle until he was nearly 50 before he could get on the staff of a hospital and demand big fees. It seemed absurd to tolerate the present outpatient system. Outpatients suffering from serious diseases sat in London voluntary hospitals for five, six or seven hours. The dependents of the workers today had no medical service unless they could pay for it, and the middle classes were given what she considered was often an inferior service. The Minister of Health had a wonderful nucleus on which to work in the machinery of the National Health Insurance Acts, maternity and child-welfare clinics, and the cancer and tuberculosis clinics. Now was the time to plan, because the medical specialists were already being remunerated by the Government. If they all came back to London the specialists would find that they had lost their patients. Surely those specialists must find it rather wonderful to be in a hospital, to know that they were economically secure, and were able to follow their particular work, without feeling that later on they would have to hold the pulse of some woman who had nothing wrong with her, except that she had not enough work to do. Under a state medical service doctors for the first time would have an opportunity for post-graduate study. Their hours would be limited and they would be sure of holidays.

Sir FRANCIS FREMANTLE said that the idea of a national medical service was nothing new. The poor-law medical service had always been at the command of every citizen. It was now necessary to link up in an organised scheme the medical services, whether personal or in an institution. The hospitals were now working together much more in the way of a public utility service. The King Edward Hospital Fund for London had done a wonderful work during the last 20 years in organising the hospitals on a uniform basis. There was also a scheme of Lord Dawson's committee about 17 years ago for organising hospitals in a new way with base hospitals and advance hospitals down to hospitals in the village. That had not been adopted. In the medical professional press the problem had been discussed most violently from both sides. The line advocated by Dr. Summerskill—a definitely socialistic scheme—had called forth vitriolic views in THE LANCET from doctors who saw nothing but harm in it from the point of view of the patients themselves or the advance of the medical profession. If any Government tried to socialize the medical profession they would be undertaking an impossible proposition. What could and must be done was to try to build up the present system. No Government would dare to do away with the voluntary principle and municipalise the whole hospital system. Dr. Summerskill had suggested that under a state medical service the doctors would be delighted to have a definite income, definite hours of work, and definite holidays. If that were so, then God help the patients, because doctors were human; there were good doctors, bad doctors and indifferent doctors. If doctors were under state control they would, as was the case with officials in any walk of life, insist on their rights, duties and privileges, and would feel it was the duty of the authorities to provide for the rest. One could not deal with the life and death questions of medicine in that way. Whatever uniform public system might be established, a large number of people would still prefer to go to their own doctors. These people would make it worth while for doctors to carry on private practices in their own little clinics, which would be private hospitals.

THE MINISTER'S REPLY

Mr. ELLIOT, Minister of Health, replying to the debate, said that at this time when we were planning for a three years' war and spending at the rate of £2,400,000,000 a year in the process, when Hitler was compelling the Germans to work longer hours and Goering was telling them that they would have to tighten their belts and would be all the better for it, we were contemplating expansion in our social services. They already cost the Exchequer and local authorities over 500 million pounds a year. The money was well invested and had provided an excellent return. In 1919, the general death-rate was 13·8 per 1000 compared with 11·6 today; the tuberculosis death-rate was 1261 per million compared with 602 today; the infantile death-rate was 89 per 1000 live births compared with 53; the maternal mortality-ratewas 4·37 per 1000 live births compared with 3·08; and the typhoid death-rate was 16 per million as compared with 3·6 in 1938.

Before this war the national service of midwives set up by the Midwives Act of 1936 was settling down to full-time work, the first steps had been taken to set up the comprehensive arrangements for the treatment of cancer under the Cancer Act of 1939, over four million houses had been built since 1918, and in other social services we were engaged on similar improvements. The evacuation scheme caused a good many shocks to the inhabitants of the reception areas. We were striving hard to make good come out of evil. He hoped shortly to complete arrangements for a greater concentration of medical effort on the school-children. Indeed they had hopes that instead of requisitioning the schools for A.R.P. posts they might be able to requisition the A.R.P. posts for the schools, and to use, for instance, the bathing provision made for decontamination of gas cases to restore to the school-children some of the facilities they had lost.

Reference had been made in the debate to the standard of living as revealed for instance in Sir John Orr's book *Food, Health and Income*. As a result of these and other studies, a good deal had been done in supplying free milk or cheap milk, cod-liver oil and other supplements, particularly to children and nursing mothers. There had recently been a further survey of over 1000 families throughout Great Britain in which Sir John Orr had again collaborated. These studies showed that in the last three to five years there had been a notable increase in the consumption of the most nutritious foods. During the war our aim must be to keep in working order this vast machine, improving it from time to time as conditions permitted.

After announcing his acceptance of Lord Nuffield's offer of 1,000,000 ordinary shares in Morris Motors Ltd. to a central fund for the coördination of hospital finance and policy in the provinces (reported in THE LANCET last week), Mr. Elliot said that even in the midst of war they were still able to obtain these princely donations for the purposes which they all desired—namely, the coördination of the hospital system as a whole. It would be unfair for him, having asked for the collaboration of all sections of the community, to take advantage of them by imposing upon the medical profession some system with which they were not wholly in agreement.

Road Accidents

In the House of Lords on Dec. 6 Lord ALNESS called the attention of the Government to the increase in road accidents in recent months. In September 1190 and in October 919 people were killed on the roads. That was an increase of 71 per cent. over the figures for the corresponding two months of 1928, which were respectively 554 and 641. More than half the casualties befel adult pedestrians and a large proportion of these were killed during the blackout period. The National Safety First Association had pointed out that if this rate went on for three years the number of deaths would be 40,000, the equivalent of an entire army corps.—Earl DE LA WARR, President of the Board of Education, said that these appalling figures were perfectly accurate. The only small comfort to be derived from them was that there was no substantial increase in the number of children under 15 killed. The Government were experimenting with various forms of lighting. Every attempt should be made to bring the seriousness of the situation before the public, and the Minister of Transport was arranging for broadcasts on road safety in the blackout. Ultimately the solution must come from the action of individuals, whether pedestrians, cyclists or motorists.—Lord ALNESS said he was not at all satisfied that the Government's plans were adequate to deal with a situation so tremendously serious.

Postponement of Legislation

In the House of Commons on Dec. 6 Mr. COLVILLE, Secretary of State for Scotland, moved the second reading of the Postponement of Enactments (Miscellaneous Provisions) Bill, which would postpone the operation of certain acts which were passed through Parliament earlier this year, and which would have come into operation on Jan. 1 next. He assured the House that the Government were anxious that there should be no further delay in bringing the acts into operation than was warranted by the circumstances. Provision was made for the postponement of the Adoption of Children (Regulation) Act 1939, the Marriage (Scotland) Act 1939 and the House to House Collections Act 1939.

QUESTION TIME

Salaries of Hospital Emergency Officers

Replying to a question by Sir ALFRED KNOX asking for a list of the appointments with a salary of £1000 a year and over that had been made by the various ministries from the declaration of war till the end of October of persons not already serving in the Civil Service, Captain CROOKSHANK, financial secretary to the Treasury, gave the following details regarding the health departments:

Hospital Emergency Service

		£
Ministry of Health	11 consultant advisers ..	1400
	1 assistant consultant adviser	1200
	1 medical superintendent ..	1200
	19 group officers	1300
	1 deputy group officer	1000
Department of Health for Scotland	3 surgical directors	1300
	1 visiting physician and general director of medical organisation for Western Scotland ..	1300

Medical Classification of Recruits

Mr. RHYS DAVIES asked the Minister of Labour and National Service whether doctors who conducted examinations under the Military Service Act were familiar with the training given in the forces to the men they examined; and, if not, would he take steps to see that all members of medical boards were invited to witness such training so that they might relate their examinations to what was expected of the men later.—Mr. ERNEST BROWN replied: The classification of men examined by medical boards in the categories specified in the National Service (Armed Forces) (Miscellaneous) Regulations, 1939, is based on medical grounds, and it is for the military authorities to determine the kind of service for which men so classified are suitable and to post them accordingly. In the circumstances, I think it unnecessary to adopt the suggestion in the last part of the question, even if it were practicable to do so.

Mr. DAVIES: Is the Minister aware that youths are often passed for military service by medical officers who in the opinion of their private doctors and in the opinion of an average layman are totally unfit to be sent for training of this kind?—Mr. BROWN: There are cases which have been brought to notice where re-examination has taken place. But I was asked to adopt another system and I would like to inform the hon. member that that system was adopted in the last war, was proved ineffective and was abandoned.

Venereal Disease

Captain ELLISTON asked the Minister of Health whether extended arrangements were being made for the treatment of contagious diseases occurring in the civil population in the neighbourhood of military encampments and munition works.—Mr. ELLIOT replied: The position is under review, and I propose shortly to issue a circular to the responsible local authorities on the matter.

Captain ELLISTON asked whether, in view of the heavy incidence of contagious diseases during the last war, he would secure the support of the naval, military and air-force authorities for the educational lectures and films offered by the British Social Hygiene Council for the instruction of the civilian and service populations.—Mr. ELLIOT, Minister of Health, replied: I will bring the suggestion to the notice of my colleagues.

Vaccination and Inoculation of Soldiers

Mr. LEACH asked the Secretary of State for War whether, in view of the fact that for the duration of the war, vaccination and inoculation were voluntary operations for all soldiers, he would abolish the recruiting regulation which forbids the enlistment of volunteers for the Regular Army who declined to promise to be vaccinated.—Mr. HORE-BELISHA replied: No, sir, my medical advisers are not prepared to make this recommendation.

Treatment at First-aid Posts

Mr. GROVES asked the Minister of Health how he reconciled the instructions that the seriously injured were to be taken direct to hospitals and not to first-aid posts with the terms of memo. E.M.S.4 issued by his department.—Mr. ELLIOT replied: Although the first-aid posts are intended primarily for the lightly injured, it is recognised that some of the more serious cases may require early treatment at first-aid posts in certain circumstances, for example, if the nearest casualty receiving hospital is much farther away than the first-aid post and the patient appears to require immediate treatment. This is indicated in the opening paragraph of E.M.S. memo. No. 4.

Anglo-French Ambulance Corps

Mr. KEELING asked the Home Secretary whether he was aware that the promoter of the Anglo-French Ambulance Corps, which was appealing for funds, was Mr. James Hargreaves Dickinson, who, in the last war, inaugurated the French Relief Fund which made unauthorised use of the names of prominent persons in this country and in France and was closed down; and whether he would expedite the introduction of a War Charities Bill which would enable the police to prevent appeals to the public

except after official investigation and approval.—Sir JOHN ANDERSON replied: I was not aware of the circumstances to which my hon. friend refers. The question of introducing legislation for the control of war charities is already under consideration.

Children in Evacuation Areas

Mr. HAROLD MACMILLAN asked the Parliamentary Secretary to the Board of Education what steps were being taken to provide medical services for children in evacuation areas.—Mr. LINDSAY replied: In circular 1479 of Sept. 29 and circular 1487 of Nov. 23 the board emphasised the importance of maintaining the health of the children left in the evacuation areas and of resuming the school medical services for these children, and they propose shortly to issue a comprehensive circular setting out in more detail the action which appears to be needed.

Dental Treatment for Evacuees

Mr. ALFRED EDWARDS asked the Minister of Health if the medical treatment referred to in Ministry of Health circular 1882 included dental treatment—namely, extraction.—Mr. ELLIOT replied: Dental treatment falls within the scope of the health services which local authorities in receiving areas have been urged to extend to members of the evacuated priority classes. In addition, the Board of Education have asked local education authorities in a recent circular to make special arrangements, where necessary, for emergency dental treatment including extraction for school-children.

Casualty Evacuation Trains

Sir ALFRED KNOX asked the Minister if he was aware that 32 trains, each with eight officials of the St. John Ambulance Association, were at present standing idle; what was the weekly cost of these officials; and why the train and the personnel could not be assembled quickly in case of an emergency.—Mr. ELLIOT replied: The casualty evacuation trains, which, owing to the course the war has taken, have happily not been used to a great extent, have hitherto numbered 28, apart from two in Scotland. They are now being reduced to 18. The weekly cost of the orderlies averages about £26 per train. The mobility of the trains and the need for keeping them and their equipment in constant readiness for immediate service, if required, make it necessary to keep trains and staff continually in commission.

Progress of Camps Scheme

Mr. CREECH JONES asked the Minister how many camps had now been completed; how many were in occupation and by whom; how many were in process of erection and how many waited to be started; and what was the number and composition of the staff of the Camps Corporation.—Mr. ELLIOT replied: Six camps have already been completed, three more will be completed by the middle of December and four more before the end of the year. A further seventeen are in an advanced stage of construction and one is on the point of being started, making a total of thirty-one camps. Two camps are in occupation—one temporarily for a limited period by a part of the women staff of the Bank of England and one by handicapped children from London. The staff of the Camps Corporation consists of the managing director, his private secretary, the secretary of the corporation, a bookkeeper, one shorthand-typist, and two clerks—a total of seven persons.

L.C.C. Cleansing Stations

Mr. MACMILLAN asked the Minister how many adult cleansing stations and how many children's cleansing stations in the London County Council area were open now.—Mr. ELLIOT replied: I am informed that in the L.C.C. area there are now open two cleansing stations for adults only, eleven for children only and twenty-one for both adults and children.

Health in Munition Factories

Mr. DAVID ADAMS asked the Postmaster-General, as representing the Lord President of the Council, what observations the Industrial Health Research Board was now carrying out with a view to ensuring that the production of war materials would not, in the near future, be endangered by excessive overtime and lack of rest of the men and women workers.—Mr. MABANE replied: The advice of the board has been sought by departments concerned with the production of war materials, and the board's investigators are making observations in factories with a view to advising how knowledge gained in previous researches can best be applied in practice under present conditions. The questions considered include hours of work, rest pauses, factory illumination under blackout conditions, and factory heating and ventilation.

Margarine

Mr. GLENVIL HALL asked the Chancellor of the Duchy of Lancaster if he was aware that most brands of margarine sold in Great Britain were inferior to butter in vitamin qualities; and if he would prohibit the sale of any margarine which was so inferior.—Mr. LENNOX-BOYD, parliamentary secretary to the Ministry of Food, replied: A large proportion of the margarine entering domestic consumption is already vitaminised. Consumers thus have the opportunity of exercising their own choice in this matter, and I see no necessity to prohibit the sale of margarine the vitamin content of which is inferior to that of butter.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED NOV. 25, 1939

Notifications.—The following cases of infectious disease were notified during the week: Smallpox, 0; scarlet fever, 1383; whooping-cough, 1414; diphtheria, 1074; enteric fever, 19; measles, 2011; pneumonia (primary or influenzal), 485; puerperal pyrexia, 162; cerebrospinal fever, 27; poliomyelitis, 12; polio-encephalitis, 3; encephalitis lethargica, 1; dysentery, 70; ophthalmia neonatorum, 53. No case of cholera, plague or typhus fever was notified during the week.

Deaths.—In 126 great towns, including London, there were no deaths from smallpox, enteric fever or measles, 3 (0) from scarlet fever, 2 (0) from whooping-cough, 27 (0) from diphtheria, 24 (3) from diarrhœa and enteritis under 2 years, and 26 (4) from influenza. The figures in parentheses are those for London itself.

Fatal cases of diphtheria were scattered over 20 great towns, Stockport and West Bromwich each reporting 3. Birmingham had 6 deaths from diarrhœa, Liverpool 5.

The Lancet 100 Years Ago

Dec. 14, 1839, *p.* 448.

From a note on "Knox's Revolving Bedstead."

An ingenious and useful article of furniture has been presented to public notice, under the above name, by Mr. W. P. Knox, upholsterer, of Jermyn-street, St. James's. . . . All our hospitals, at times, present cases in which the progressive characters of spinal diseases and diseases of the hip-joint, for instance, are not perfectly ascertained, simply from want of the means of a visual and manual inspection of the affected divisions. . . . The bedstead of Mr. Knox allows every portion of the surface of the body to be examined by the eye and hand; and, moreover, permits the patient to be placed in any position that is desired, in order to facilitate treatment or procure ease, unhandled by the nurse, and as readily facilitates the changes of the bed and body-linen. The value of this contrivance has been repeatedly tested at St. Thomas's Hospital; in some cases prolonging life, in others relieving acute pains, and leading to a permanent cure. At the Westminster Hospital, in the case of a female patient who had gone two years unexamined, the long-desired inspection on this bed was at once advantageously procured. In private houses its use is yet oftener needed, removing, on such occasions, a great weight of doubt and undue responsibility from the mind and acts of the surgeon.

MEDICAL NEWS

University of Cambridge

Mr. Clifford White has been appointed an additional examiner for midwifery in part I of the final M.B. examination to be held this month.

On Dec. 9 the following degrees were conferred :—

M.D.—T. G. Armstrong.
M.B., B.Chir.—J. R. Squire and J. W. Lacey.

University of London

At recent examinations the following were successful :—

THIRD EXAMINATION FOR M.B., B.S.

F. L. Dyson (*d*), Univ. Coll. ; Lilias M. P. Gairdner (*d*), Roy. Free ; J. E. Richardson (*a*), London ; P. T. Savage (*a*), London ; Muriel C. Yates (*a*), Roy. Free (all with honours) ; Raymond Asquith, St. Thos. ; J. R. Audy, Guy's ; I. H. Baum, St. Bart.'s ; R. C. S. Benson, London ; K. M. Bhansali, Univ. Coll. ; John Bleakley, St. Mary's ; A. D. Bone, St. Thos. ; J. A. Bowen-Jones, Guy's ; A. R. Bradley, Guy's ; J. R. Caldwell, St. Thos. ; D. M. F. Carter, Guy's ; C. D. Chilton, Cardiff ; J. D. Craig, St. Mary's ; A. H. Cutting, King's Coll. ; H. H. Dickson, Middlesex ; A. J. Drew, Guy's ; D. A. J. Ebrill, St. George's ; G. R. Fearnley, St. Thos. ; Wilfred Fine, Guy's ; Betty Fox, Brist. ; H. R. W. Franklin, Guy's ; J. B. Franklin, Guy's ; F. N. Glover, Guy's ; A. C. Greene, Guy's ; W. E. Greenwood, Guy's ; E. R. Gubbay, St. George's ; Violet E. N. Harris, Roy. Free ; W. R. L. Harrison, Guy's ; C. F. Hawkins, Guy's ; S. R. T. Headley, St. George's ; F. A. Henley, Middlesex ; R. N. Herson, St. Bart.'s ; R. N. Houlding, Univ. Coll. ; P. H. Jayes, St. Bart.'s ; J. B. Kershaw, London ; Barnett Levin, Guy's ; W. S. Lewin, Univ. Coll. ; A. E. Loden, Guy's ; I. D. MacDonald, St. Thos. ; G. C. Mackay, St. Bart.'s ; A. H. Millard, Cardiff ; H. E. Moody, Guy's ; A. D. Newsholme, St. Thos. ; D. A. Osborn, Guy's ; F. R. Philps, Univ. Coll. ; M. J. Pleydell, St. Bart.'s ; B. A. Pomryn, Westminster ; T. M. L. Price, Guy's ; H. V. Reeves, St. Thos. ; Constance M. B. Shaw, King's Coll. ; H. D. Smith, Guy's ; P. R. Stringer, Middlesex ; F. D. G. Thomas, Univ. Coll. ; Joan Wagstaff, Univ. Coll. ; R. A. White, St. Bart.'s ; R. M. Williams, King's Coll. ; N. N. Wilson, London ; J. C. Ballantyne, St. Bart.'s ; Rosalind S. Barclay, Manch. ; Anna M. Berry, Univ. Coll. ; Geoffrey Beven, King's Coll. ; Winifred C. M. Bulkeley, Roy. Free ; A. G. N. Calder, Middlesex ; Jack Colover, Univ. Coll. ; Jean M. Drury-White, Roy. Free ; P. M. Elder, St. Bart.'s ; G. R. Fisk, St. Bart.'s ; J. M. French, Guy's ; F. J. Gillingham, St. Bart.s' ; J. F. Hughes, St. Bart.s' ; J. P. Irwin, St. Thos. ; G. C. A. Jackson, St. Thos. ; R. R. Klein, King's Coll. ; D. C. Lewin, Guy's ; H. F. Lunn, Guy's ; A. S. Oscier, St. Bart.s' ; J. L. Penistan, London ; R. W. B. Scutt, Westminster ; Margaret M. Shrubsall, Roy. Free ; Joyce R. Simmons, Roy. Free ; S. C. F. Stephenson, St. Mary's ; Martin Ware, St. Bart.'s ; Marguerite Watts, Roy. Free ; and Alice Yates, Univ. Coll.

(*a*) Distinguished in pathology ; (*d*) distinguished in medicine.

The following students have passed in the groups or parts shown below :—

Group I (under old regulations).—H. A. C. Chalmers, P. W. Clarkson, J. R. Elwell, M. R. Hayes, Kathleen Hodkinson, E. G. Hosking, D. R. M. Jones, A. H. Mayne, R. P. M. Miles, I. H. Miller, John Newsome, S. D. Perchard, F. H. Scoones, C. J. P. Seccombe, A. S. Sen, A. G. Stephenson, and R. D. Ward.

Group II (under old regulations).—O. P. Dinnick, M. M. Ernst, S. T. Hayes, and M. H. Kinmonth.

Part I (under revised regulations).—G. C. Acres, T. A. H. Adkins, A. F. Baldwyn, D. A. Barley, W. R. Barrington, C. J. Bintcliffe, Monica M. Bird, Winifrid M. Bond, Frances D. Bosanquet, G. R. Boyes, Barbara J. H. Broadwood, P. M. Burton, Joan M. Cheale, D. R. Christie, F. B. Cockett, D. P. Cocks, O. L. C. Cookson, Dorothy J. Cooper, H. P. F. Corbin, T. H. Cullen, William Darby, E. R. Davies, J. I. Davies, L. D. de Launay, F. A. Denz, Evelyn M. Eldrid, Minas Elias, G. R. Evans, I. G. Fergusson, Joan FitzHerbert, James Freeman, H. J. Friend, Kenneth Froome, A. D. M. Greenfield, Margaret E. Harker, J. T. Harold, J. R. Hart, D. H. Hennessy, S. W. Hinds, C. A. Holman, L. B. Holt, J. C. Houston, R. E. B. Hudson, W. H. W. Jayne, Anis Jones, J. A. Keeping, A. W. Kennett, H. H. Khan, W. S. Killpack, Irene M. V. King, D. R. Livingston, C. D. L. Lycett, Kathleen B. McClintock, D. G. C. Macdonald, Michael McFarlane, Jean D. McKendrick, Alastair Maconochie, E. T. Manley, Joseph Marks, L. W. C. Massey, R. M. Mayon-White, F. B. Meade, Edith S. M. Merry, J. J. Messent, Margaret Middleton, J. V. Mitchell, Robert Moore, B. L. Morgan, J. T. Morgan, Margaret E. Morgans, Sheila M. Newstead, Doreen Nightingale, Dennis Nixon, A. O. A. Ohannesian, B. C. H. O'Neill, J. W. Paulley, H. T. Phillips, P. D. Rawlence, K. O. Rawlings, H. H. Renyard, T. H. E. Richards, Joan A. Rosmarin, M. H. Rotman, R. W. Rowan, H. A. Rowley, A. F. Rushforth, Alec Sakula, A. C. J. Sandek, J. N. R. Scatliff, Erich Schlesinger, L. G. Scott, M. A. Shellim, Barbara M. Sibbald, L. P. Sitwell, Daisy M. Smith, Irene J. Stark, B. A. D. Stocker, P. H. Sutton, D. R. Syred, Margaret L. Taylor, H. A. Warbrick-Smith, J. A. E. Watts, Max Waytzman, Arthur Webb-Jones, Robert Wigglesworth, D. W. Williams, D. A. J. Williamson, Werner Wohlfarth, and P. H. Woodcock.

Part II (under revised regulations).—R. H. Anthony, Margaret Bennett, C. J. Bintcliffe, Jean R. C. Burton-Brown, Isabella S. Chalmers, I. R. Davies, Jean L. Edwards, Enid J. Fair, R. V. Jones, B. U. Meyer, E. W. Miles, D. A. Miln, Margaretta D. Morrell, A. S. S. Playfair, J. D. Randall, G. F. Smart, B. J. D. Smith, B. E. C. Stanley, May D. Westerman, Elizabeth Whatley, and Hugh Wormald.

Part III (under revised regulations).—Eileen M. Benison, Frank Luckett, and Donald Munro-Ashman.

The following passed in the examination for the post-graduate diploma in psychological medicine with special knowledge of mental diseases :—

D. W. Abse, Sophie Bookhalter, H. S. Joseph, W. A. O'Connor, J. D. Sutherland, and J. D. Uytman.

University of Dublin

On Dec. 6 at the School of Physic, Trinity College, the following degrees were conferred :—

M.D.—D. H. T. Duggan.

M.B., B.Ch., B.A.O.—G. A. Anderson, G. F. N. Anderson, T. N. Arthur, G. O. Atkinson, W. E. Bamford, Muriel Bannister, C. W. Bradfield, Ronald Brass, H. D. Chomse, P. C. Denham, J. M. Dougan, Kathleen Dowling, H. J. F. Draffin, Lucia M. E. FitzGerald, P. M. Goedvolk, B. S. Good, R. G. P. Heard, N. J. Hogan, D. A. Huggard, A. H. Isaacson, Maureen C. Johnston, William Jones, E. F. Keating, G. E. P. Kelly, Sheila Kenny, L. N. Lynch, Nathan Marks, E. G. Millar, J. C. G. Moore, D. St. B. F. Nunan, David Selman, Matthew Shreider, J. H. Tyrrell, M. H. Waters, and Frances M. C. Wolfe.

At recent examinations the following were successful :—

M.D.

A. H. Smith and D. H. T. Duggan.

FINAL MEDICAL EXAMINATION, PART II

Medicine.—P. M. Goedvolk and H. H. Balch (first-class honours) ; J. M. Dougan, E. G. Millar, G. O. Atkinson, Maureen C. Johnston, and H. D. Chomse (second-class honours) ; J. H. Tyrrell, P. H. Rubenstein, K. T. Acton, M. N. O'Riordan, Samuel Tennenbaum, M. H. Waters, Annie Dowds, J. L. Handelman, S. F. H. Haughton, J. H. Acton, P. C. Denham, W. M. Winn, Marvin Polansky, and Jack Morris.

Surgery.—Muriel Bannister, R. G. P. Heard, J. C. G. Moore, C. W. Bradfield, David Selman, and E. G. Millar (second-class honours) ; W. E. Bamford, B. S. Good, J. M. Dougan, Samuel Fine, Kathleen Dowling, J. H. Tyrrell, G. F. N. Anderson, H. J. F. Draffin, Moira M. Mallagh, G. A. Anderson, N. J. Hogan, R. W. Carey, Sheila Kenny, Lucia M. E. FitzGerald, E. F. Keating, P. F. Longford, P. C. Denham, T. N. Arthur, D. A. Huggard, William Jones, Ronald Brass, A. H. Isaacson, R. F. G. Lyons, G. E. P. Kelly, D. St. B. F. Nunan, Matthew Shreider, R. R. Hogg, G. O. Atkinson, L. N. Lynch, and Isidore Shreider.

Midwifery.—Henry FitzGibbon (first-class honours); Caroline A. McEvett, Margaret Sutcliffe, and Einhart Kawerau (second-class honours); R. J. S. Wilson, P. F. Longford, Frances M. C. Wolfe, Harry Menter, J. H. Acton, David Aiken, W. F. Rogers, Isabel M. Woodhouse, Lois J. Macaulay, J. I. Stafford, G. H. Blennerhassett, R. D. McCaully, S. D. Reid, P. H. Rubenstein, J. G. P. Mullally, D. O. Hicks, H. F. Kamp, Nathan Marks, Margaret L. Campbell, Henry Hutchinson, and H. J. Smith.

DIPLOMA IN GYNÆCOLOGY AND OBSTETRICS

M. M. Abou Ragab.

D.P.H.

Part II.—T. S. Agnew.

University of Sheffield

Dr. J. A. Charles has been appointed external examiner in public health.

Royal Surgical Aid Society

The 77th annual general meeting of this society was held on Dec. 4, when the Lord Mayor of London, Sir William Coxen, who presided, said that during the past year £45,000 had been expended and 500 appliances supplied each week. Not only did the work of the society relieve the suffering of patients, but it enabled them to become independent and self-supporting. Dr. Garfield Williams, dean of Manchester, who proposed the adoption of the report, spoke of his early memories of the society in connexion with his mother's philanthropic work. He considered that the society was an example of discriminating charity, and he thought it was supported by people with hard heads and soft hearts—a superb combination. Mr. Clifford Carter, in proposing a vote of thanks to the medical and surgical staff, mentioned particularly Mr. Laming Evans, who has retired after 27 years' service. Mr. B. Whitchurch Howell, who is now senior surgeon, in reply said that in spite of the difficulties of the present time the number of patients attending the charity had scarcely diminished.

Service Awards

The Royal Naval Volunteer Reserve Officers' decoration has been awarded to Surgeon Commander Robert Hall and Surgeon Commander Hoël Parry-Price.

British Social Hygiene Council

Sir Walter Langdon-Brown has been appointed president of this council in succession to the Rt. Hon. L. S. Amery, M.P.

Appointments

CUMMING, A. R. R., M.B. Aberd., senior resident medical officer at London Road Hospital, Stoke-on-Trent.

DOUGLAS, W. M., M.B. Glasg., assistant medical officer at the Oakwood Hall Sanatorium, Rotherham.

GRIFFITHS, D. L., M.B. Manch., F.R.C.S., chief assistant to the orthopædic unit of the Royal Infirmary, Manchester.

HEDDY, W. H., M.R.C.S., D.P.H., coroner for East London.

HILL, J. L., M.B. Belf., D.P.H., assistant school medical officer and assistant medical officer of health for Oldham.

HYND, R. S., M.B. Manch., D.P.H., deputy medical officer of health for Lincoln.

KEEVIL, NORA L., M.D. Lond., resident medical officer at the Lydia Benyon Maternity Hospital, Newport, Mon., and assistant medical officer for maternity and child welfare for the county.

LEWIS, J. T. R., M.D. Lond., D.P.H., deputy medical officer of health and deputy school medical officer for Croydon.

PAYNE, D. D., M.D. Lond., D.P.H., medical officer of health and school medical officer for Harrogate.

PAXTON, MARGARET S., M.B. Edin., assistant welfare medical officer for the county of Durham.

King Edward VII Welsh National Memorial Association.—The following appointments as area assistant tuberculosis physicians are announced :—

DOUGLAS, BARBARA, M.B. Glasg. ;
GREIG, R. W. B., M.B. Aberd. ;
HANLY, JAMES, M.B. N.U.I., D.P.H.; and
JENKINS, T. H., M.B. Lond.

Examining Surgeons under the Factories Act, 1937 : Dr. DOMINIC CIANTAR (Abercrave district, Breconshire); and Dr. J. A. R. CANT (Coleshill district, Warwickshire).

Colonial Medical Service.—The following appointments and promotions are announced :—

CANNON, D. A., M.B. Glasg., D.T.M. & H., medical officer, Nigeria ;
MACPHERSON, D. C. M., M.B., D.T.M., assistant director of medical services, Fiji ;
MACQUEEN, JOHN M.D. Edin., D.P.H., deputy director of medical services, Palestine ;
MARRABLE, I. H., M.R.C.S., medical officer, West Africa ;
STOCK, F. E., M.B. Lond., F.R.C.S., medical officer, West Africa ;
TOWNSEND, H. S., M.B., D.T.M. & H., senior health officer, Gold Coast.

Medical Diary

Week beginning Dec. 18

FELLOWSHIP OF MEDICINE AND POSTGRADUATE MEDICAL ASSOCIATION, 1, Wimpole Street, W.1.

MONDAY to SATURDAY—St. Mary's Hospital, Paddington, W.2, F.R.C.S. (final) Course—Tues., Wed., and Thurs., 8 P.M., Royal Cancer Hospital, Fulham Road, S.W.3, daily 9.30 A.M.—comprehensive F.R.C.S. (final) course. Brompton Hospital, S.W.3, Mon. and Wed., 4.30 P.M.—M.R.C.P. course in chest diseases. Medical Society of London, 11, Chandos Street, W.1, Tues., 4.30 P.M., Mr. G. C. Knight: Sympathetic Nervous System; Wed., 4.30 P.M., Mr. Kenneth Heritage: Testicle and Prostate.

MANCHESTER ROYAL INFIRMARY.

TUESDAY—3.30 P.M., Dr. F. R. Ferguson : Air-raid Neuroses and their Treatment.

FRIDAY—3.30 P.M., Dr. J. Wharton and Dr. P. B. Mumford : Poisoning by Mustard Gas and other Poison Gases with special reference to the Treatment of Lesions of Eyes and Skin.

Vacancies

Bangor, Caernarvonshire and Anglesey Infirmary.—Sen. and jun. H.S.'s, £170 and £120 respectively.
Bath, Royal United Hosp.—Res. H.S.'s and H.P.'s, each £150.
Birmingham Maternity Hosp.—H.S., at rate of £75.
Birmingham City Maternity and Child Welfare Dept.—Temp. M.O., £10 a week.
Bristol City and County.—Asst. M.O.H., £500.
Bury County Borough.—Asst. M.O.H., at rate of £550.
Chelsea Hosp. for Women, Dovehouse Street, S.W.3.—Surgeon. Also two H.S.'s, each £130.
Chester, City Hosp.—Sen. and jun. res. M.O.'s, at rate of £350 and £150 respectively.
Colchester, Royal Eastern Counties' Institution, &c.—Asst. M.O., £400.
Derby, Derbyshire Royal Infirmary.—Res. anæsthetist, £150.
Durham County Council.—Deputy county M.O.H., £960.
Elizabeth Garrett Anderson Hosp., Euston Road, N.W.1.—Two H.P.'s, res. anæsthetist, sen. H.S., and three H.S.'s, each £100.
Erith Borough.—Ophthalmic surgeon for School Medical Service, £2 12s. 6d. per session.
Exeter, Royal Devon and Exeter Hosp.—H.S., at rate of £150.
Folkestone, Royal Victoria Hosp.—Jun. res. H.S., £130.
Gloucester, Gloucestershire Royal Infirmary, &c.—H.S., at rate of £150.
Greenwich Metropolitan Borough.—Tuberculosis officer for council's dispensary and deputy M.O.H., £750.
Holt, Norfolk, Kelling Sanatorium.—Jun. res. M.O., £250.
Hull Royal Infirmary.—Cas. O., at rate of £150.
Ilford, King George Hosp.—Two H.S.'s, each at rate of £100.
Kent Education Committee.—Asst. school M.O., £12 a week.
Kidderminster and District General Hosp.—Sen. H.S., at rate of £150.
Lancaster Royal Infirmary.—Jun. H.S., at rate of £130.
Lincoln City.—Asst. M.O.H., £500.
Lincoln County Hosp.—Sen. H.S., at rate of £250.
Liverpool, County Mental Hosp., Rainhill.—Deputy med. supt., £800.
Manchester, Ancoats Hosp.—Cas. O., £150. Also clin. asst. for ear, nose, and throat dept.
Manchester, County Mental Hosp., Prestwich.—Med. supt., £950.
Manchester, Duchess of York Hosp. for Babies.—Asst. anæsthetist.
Manchester Royal Infirmary.—Chief medical asst. to clin. investigations and res. dept., £350.
Manchester, Victoria Memorial Jewish Hosp., Cheetham.—Res. surg. O., £200.
Newcastle upon Tyne, Royal Victoria Infirmary.—Res. appts., at rate of £200 to £50. Also res. M.O., £200.
North Middlesex County Hosp., Silver Street, Edmonton, N.18.—Res. obstet. H.S., at rate of £100. Also asst. M.O., at rate of £350.
Richmond, Surrey, Royal Hosp.—Sen. H.S., £150–£200.
Sheffield, Jessop Hosp. for Women.—H.S., at rate of £100.
St. John's Hosp., Lewisham, S.E.13.—Res. surg. O., £200.
St. Mary's Hosp., W.2.—Sen. and jun. asst. radiologists, £125 and £75 respectively.
Truro, Royal Cornwall Infirmary.—Hon. ear, nose, and throat surgeon.
Wakefield City.—Jun. asst. M.O., £500.
Weir Hosp., Weir Road, Balham, S.W.12.—Jun. res. M.O., £150.
Worthing Hosp.—Temporary general surgeon. Also temporary anæsthetist.
Wrexham and East Denbighshire War Memorial Hosp.—Res. H.S., at rate of £150.
York County Hosp.—H.S., £150.

Births, Marriages and Deaths

BIRTHS

BARTLETT.—On Dec. 4, at Saffron Walden, the wife of Dr. J. Bartlett—a daughter.

CHAPPEL.—On Dec. 7, at Norwich, to Audrey (*née* Long), wife of Dr. J. G. Chappel—a daughter.

DORLING.—On Dec. 5, at Bromley, the wife of Mr. G. C. Dorling, F.R.C.S. of Blackheath—a son.

ELLMAN.—On Dec. 5, at Worthing, the wife of Dr. Philip Ellman, of Weymouth Street, W.1—a son.

GARDINER-HILL.—On Dec. 8, the wife of Dr. Clive Gardiner-Hill, of Banbury—a son.

GASTON.—On Dec. 4, at Sevenoaks, the wife of Dr. A. P. Gaston—a daughter.

TREVELYAN JONES.—On Dec. 7, the wife of Dr. R. Trevelyan Jones, of Wolverhampton—a son.

MARRIAGES

MACKENZIE—PETLER.—On Dec. 8, at Glasgow, Colonel Donald Francis Mackenzie, R.A.M.C., to Nina Rosina Petler, of Swannington, Norfolk.

PAGE—VAUX.—On Nov. 29, at Solihull Parish Church, Erichsen Sutton Page, F.R.C.S., to Ethel Muriel Vaux, of London.

PRICHARD—WEBBER.—On Dec. 9, in Llandaff Cathedral, John Stobo Prichard, M.B., R.A.M.C., of Barry, Glamorganshire, to Joan Suzanne Webber, of Penylan, Cardiff.

DEATHS

ALPIN.—On Dec. 6, Lieut.-Colonel William George Patrick Alpin, M.D. Brussels, M.R.C.S., I.M.S. retd., of Richmond, Surrey, aged 80.

BAKER.—On Dec. 9, suddenly, at Ferndown, Dorset, Lieut.-Colonel William Lincoln Baker, M.R.C.S., R.A.M.C. retd.

BRANDER.—On Dec. 7, at Keighley, Hugh Steward Brander, M.D. Aberd., aged 59.

FELLS.—On Dec. 9, Arthur Fells, F.R.C.S.E., of Clifton, Bristol, aged 70.

PUGH.—On Dec. 10, John Hopkins Pugh, B.A. Camb., M.R.C.S., L.S.A., of Buckhurst Hill, Essex, aged 90.

RANDALL.—On Dec. 7, 1939, at Haslemere, Martin Randall, M.D. Lond., F.R.C.S., aged 71.

REYNOLDS.—On Oct. 17, missing from S.S. *Yorkshire*, Lieut.-Colonel William Leonard Eliot Reynolds, M.R.C.S., R.A.M.C., of Ewshot, near Farnham.

SCOTT.—On Dec. 11, at Guildford, Dr. Charles Casely Scott, M.B.Edin., aged 81.

SUTTON.—On Dec. 9, at Reading, the Rev. Francis William Sutton, M.D.Durh., formerly medical missionary in Upper Burma and Pondoland.

TODD.—On Active Service, Thomas Francis Todd, M.S. Lond., F.R.C.S., of Manchester.

WEBB.—On Dec. 7, Hugh Webb, M.R.C.S., R.A.M.C. retd., of Earl Soham, Suffolk, aged 80.

NOTES, COMMENTS AND ABSTRACTS

BLOOD GROUPING IN GENERAL PRACTICE

Dr. J. HASTIE JONES writes: The following practical additions to your special article on Blood-groups Explained[1] may be of value to those who had no experience of grouping in their student days. The two current systems of nomenclature are the Moss and the International. The Moss arrangement uses numbers and the International letters. The universal recipient is group 1 or AB; the universal donor is group 4 or O. The other two are group 2 or A and group 3 or B. In practice, the donor's serum is so greatly diluted that it can be neglected. The important point is the effect of the recipient's serum on the donor's red cells. If these are incompatible, trouble ensues.

Grouping.—To find the group of an unknown blood one uses sera of group A and group B; these sera should be of high titre (about 1 : 100, c.f. the normal, which ranges from 1 : 30 up). A drop of the unknown blood (X) is added to twenty times its volume of saline, and a drop of this mixture (virtually a suspension of the unknown red cells) is added to each of two drops of the known sera A and B on a clean glass slide. Each is thoroughly mixed, with a separate mixer so that no cross-contamination occurs. If the corpuscles are incompatible, in a few moments they become clumped together as particulate masses, visible to the naked eye. Four possible reactions may occur:—

(1) If neither serum causes clumping, X = O.

(2) If both sera cause clumping, X = AB.

(3) If serum A causes clumping, while serum B does not, X = B.

(4) If serum B causes clumping, while serum A does not, X = A.

The presence or absence of clumping may be confirmed with a hand lens or low-power microscope. A possible source of error is pseudo-agglutination or rouleaux formation (detectable under the microscope, and usually prevented by the use of properly prepared grouping sera). Rouleaux can usually be broken up by tapping the slide smartly. Pseudo-agglutination is unlikely to occur with stock group-sera, as the power to produce it is transient in serum. It may give trouble in direct matching, as sera of ill patients with high sedimentation-rates are specially prone to produce it. Cold agglutination can be prevented by gently warming slide.

Direct matching.—Even when the group of the donor is known to be compatible with that of the recipient, direct matching is still essential. A Widal tube full of the patient's blood is collected and allowed to clot. Enough can be got from the ear, thus avoiding venepuncture; the less damage to the recipient's veins the better. If no centifuge is at hand, in 15 minutes enough serum will be available. A drop of this is pipetted off on to a glass slide. A drop of the donor's blood is added to about twenty times its volume of saline, and a drop of this suspension is added to the drop of recipient's serum. If no clumping occurs, all is well.

In our Isle of Wight Blood Transfusion Service, we have the following number of donors:—

Group	AB	A	B	O
Peace-time donors ..	.. 2 ..	18 ..	2 ..	18
War emergency donors ..	.. 7 ..	113 ..	20 ..	109

The sincerity and cheerfulness of these good people is most impressive. In the rest of the country, only group O donors have, as a rule, been enrolled, for simplicity in organisation. This overdose of group O seems to be an unfortunate necessity, for time might prove too short for grouping casualties.

1. *Lancet*, Oct. 21, 1939, p. 901.

AGIN THE GOVERNMENT

IN his frank, lively and altogether unconventional autobiography ("All Too Human." London: Peter Davies. 1939. Pp. 384. 8*s.* 6*d.*) Colonel Owen Berkeley-Hill discloses himself as an enfant terrible constantly at grips with constituted authority. Most of his life, in the words used by Sydney Smith to describe his own, he has been "like a razor, either in hot water or a scrape." Starting with his childhood and adolescence, he goes on to depict his early sex life, explains how he came to take up psychiatry, and recounts his experiences in the Indian Medical Service and, during the last war, in East Africa. The story of his fight with apathetic bureaucracy to improve the appalling condition of the old "lunatic asylum" at Ranchi is stimulating. In later chapters he tells of his entirely successful marriage to an Indian lady and of his love of children and horses. The enfant terrible asserts itself again in his account of how he deserted a sight-seeing party on a visit to Washington, choosing to watch a game of polo rather than visit the famous cemetery at Arlington. Coming at this time of intense racial propaganda, his remarks on miscegenation are interesting and might provide food for thought if they could be introduced into Germany by the Royal Air Force.

TUMOURS OF THE FRONTAL LOBE

IN a long article, profusely illustrated with diagrams, photomicrographs, and encephalograms, Prof. Alejandro Schroeder (*Ann. Fac. Med. Montevideo*, 1939, **24**, 421) reviews the anatomy and histology of the frontal lobe and the symptomatology of lesions in that area and describes 18 new cases of frontal-lobe tumours. He concludes that the signs and symptoms of these tumours depend more on the concomitant cerebral œdema than on the anatomical relations of the tumour or its degree of malignancy. In his view mental changes are commonly associated with a tumour in the frontal lobe because this lobe occupies a large space and is exceptionally rich in white matter, which is the cerebral tissue most subject to œdema. The œdematous frontal lobe then presses on the main blood-vessels and disturbs the circulation of the whole brain, and it is this disturbance that produces the clinical picture. No clinician, says Professor Schroeder, should therefore attempt to diagnose a tumour of the frontal region on signs and symptoms alone; the diagnosis must rest on careful ventriculography.

A MURDER STORY

IN Belton Cobb's latest thriller ("Death Defies the Doctor." Longmans, Green and Co. 1939. Pp. 286. 7*s.* 6*d.*) Cicely Cork, a crassly stupid young woman with a pronounced father-fixation, became engaged to Donald Galt, a veterinary surgeon of surpassing physical attractions but lamentably lacking in moral health. Cicely's invalid father, suffering from rheumatoid arthritis and inoperable carcinoma of the stomach, is scheduled by a "specialist" to live for a year or more but dies prematurely from an overdose of morphia. This diagnosis is made, apparently in a lucid interval, by the absent-minded Dr. Critchley—surely one of the most imbecile practitioners of fiction—who stands to gain a large sum by the premature demise of his patient. Galt, knowing nothing of this, is anxious that the old man should die as soon as possible so that he can marry Cicely for financial reasons. Doctor, vet, daughter and devout maidservant are all more or less suspect, and Superintendent Rolfe, who should never have attained that lofty rank, is completely defeated by the problem. It is to be hoped that the reader will have less difficulty than had Detective-Inspector Burmann in spotting the guilty party in this ingenuously told tale.

DENTAL CARIES

IN a paper read at the annual meeting of the British Dental Association (*Brit. dent. J.* 1939, **67**, 376) Dr. B. Gottlieb suggests that future research on the ætiology of dental caries should first be directed to the question whether certain qualities of the saliva are connected with immunity from and susceptibility to that disease. If such is the case, the next step would be to find how these qualities could be influenced by diet or drugs. He is by no means the first to make this suggestion, for many have suspected that in variations in the saliva lies the explanation of the temporary liability to dental caries which accompanies impaired health and nutrition. This line of research has up to now received small support in this country, partly owing to its technical difficulty and partly because some preliminary investigations carried out under the direction of the Dental Investigation Committee of the Medical Research Council were difficult to interpret. In the American schools, on the other hand, much accurate information has been obtained and standard methods of estimation have been devised; and there is reason to believe that further progress is in sight.

BRAIN SURGERY NEAR THE FRONT

WAR-TIME cranio-cerebral projectile wounds were discussed at meetings of the *Académie de Chirurgie* in October, the principal speakers being Dr. de Martel and Dr. Clovis Vincent. Dr. de Martel pleaded for the organisation of special operative facilities for cranio-cerebral surgery near the front, and pointed out how much modern neuro-surgery could do for wounded in this category in a great military offensive if it could be applied within a brief interval of the infliction of these wounds. He said he had already collected funds sufficient for equipping three cranio-cerebral operative units whose instruments were costly enough. Dr. Clovis Vincent maintained that if conditions were favourable for intestinal surgery it should also be possible to do brain surgery.

POPULAR PÆDIATRICS

Writing as "one mother to another," Mrs. Holmes, the *Evening Standard* nursery expert, sets out (First Baby. Blackie and Son. 1939. Pp. 177. 3*s*. 6*d*.) in attractive style theoretical guidance for the young mother, after a shaky start with an introduction which seems confused about instinct. She is unfortunately inaccurate on the fundamental subject of cow's milk. In discussing the grades she omits altogether the "Accredited" varieties and displays a touching faith in the complete safety of "Certified (Tuberculin Tested)," so that she recommends it unboiled for babies over three months of age. The term "pure cow's milk" is used far too vaguely, and for some unexplained reason the expectant mother is told to drink unpasteurised milk. These blemishes are serious in a work designed for the ignorant mother. A careful revision would turn it into a practical and valuable handbook.

DIARIES

The Anglo-French Drug Co., 11, Guilford Street, London, W.C.1, have sent us a useful tear-off calendar for the desk. There is a page for each day of 1940, and the small strip of advertisement at the foot of each leaves a generous space for important memoranda and revealing doodles.

The Dental Manufacturing Company, 97, Great Portland Street, London, W.1, have issued a diary of appointments for dentists. Each page is ruled for quarter-hourly appointments, and with three days on each side the book opens to show a complete week's work at a glance. There are 16 pages of references, tables, and data at the front of the diary and a detachable address book at the back. There is no advertisement matter, and the price is 6*s*. 6*d*.

BALL GAMES

GYMNASTIC teachers, club leaders, athletic coaches and all who have to train or recreate boys and men should read Mr. Major's little book.[1] The medicine-ball has only recently been introduced into this country, chiefly by Bjorneby and Harper in their Britnor recreational gymnastics. The idea has gained popularity and Mr. Major gives many photos of exercises for individual or group work, and a section on team games with diagrams. The weight and size of the ball is a matter of choice (they range from 1 to 9 lb.) so that children and girls may also enjoy this form of exercise. It can be graded from light to exceedingly strenuous play. As a training in skill, accuracy and control for field games it should be invaluable. If introduced as a means both of recreation and keeping fit for some of our present "waiting units" on duty with searchlights or anti-aircraft guns, it would probably be popular. In any stationary camp or unit it might be well worth while to offer this new indoor or outdoor recreation to the men.

OUR DESK COMPANION

THE MEDICAL DIRECTORY 1940 reaches us well before the end of the year. The gratifying change in type is making progress and has now reached p. 1046, but at the same time the newly set portion is undergoing beautification. Bold headings make the local London list easier to find one's way about in and the London hospitals, other than those of the teaching schools, are getting the importance they deserve. All this must mean costly revision, but it does enhance the value of the directory. Moreover the economy of space prevents the volume becoming unwieldy and only displeases those who want to make marginal notes. There are 1738 more names in the directory this year than last—an almost unprecedented increase—and it is not the fault of the editors that so many of the addressees are elsewhere. The price remains at 42*s*. from Messrs. J. & A. Churchill.

FITNESS WITHOUT FLESH

Mr. Stanley B. Whitehead, D.Sc., is a vegetarian and like most vegetarians he has never thought through the implications of his beliefs nor tackled his metaphysics satisfactorily. In the foreword to his "Everyday Fare for Fitness" (John Lane, The Bodley Head. 1939. Pp. 166. 5*s*.) he writes: "Furthermore, each of these foods" (fruits, vegetables, white grain cereals, nuts and dairy foods) "is chemically and biologically balanced by the master hand of Nature for our use." Such is one of his premises, stated dogmatically, just like that. (The scientist might say that the original wheat berry, found on Sinai, was chemically and biologically balanced for the nutriment of the wheat embryo but hardly for the nutriment of man.) Yet we find him advocating as a regulatory food "Bemax (wheat germ) and similar naturally derived products." He recommends charcoal after a meal and puts Worcester sauce into an autumn salad. What is there chemically and biologically balanced about charcoal and Worcester sauce? "Olive oil," he says, "is a useful adolescent food, as it lubricates the internal membranes of the abdomen and also soothes the activity of the genital organs." How does he know such things? And what does "Berry drinks are blood enriching" mean? None the less, a cook will find some intersting suggestions among his recipes. His salads read attractively and there is much sense at the back of his rules for controlling weight.

CORRIGENDUM.—The title of the book by Dr. W. T. Vaughan reviewed on page 1223 of our issue of Dec. 9 is "Primer of Allergy."

1. Medicine-Ball Exercises and Games. By E. Major, warden, Carnegie physical Training College, Leeds. London: University of London Press. 1939. Pp. 98. 3*s*. 6*d*.